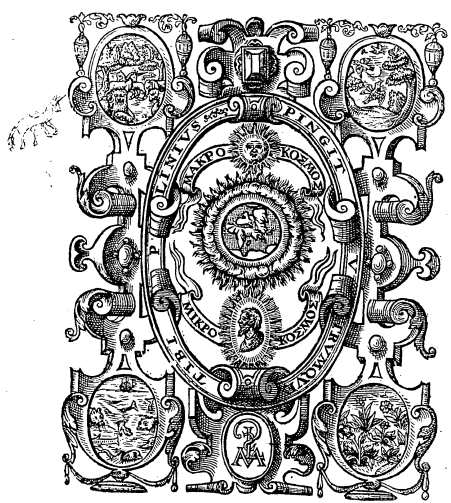
THE HISTORIE OF THE WORLD:

Commonly called,

THE NATVRALL HISTORIE OF C. PLINIVS SECVNDVS.

Translated into English by PHILEMON HOLLAND *Doctor of Physicke.*

The first Tome.



LONDON,
Printed by *Adam Islip*, and are to be sold by *John Grismond*, in *Ivy-lane* at the Signe of the *Gun*. 1635.

Nov. 1912
27659

TO THE RIGHT HONOVRABLE SIR *ROBERT CECIL* KNIGHT, PRINCIPALL SECRETARIE TO THE QVEENS MAIESTIE, MASTER OF COVRT OF THE WARDS AND LIVERIES, Chancellor of the Vniuerſitie of Cambridge, and one of her *Maieſties moſt Honourable Priuie Counſell.*

Ralphe Grey

THE friendly acceptance which T. Livius *of Padua hath found in this Realme, ſince time hee ſhewed himſelfe in Engliſh weed vnto her ſacred Majeſtie, hath trained over vnto him his neighbour* Plinius Secundus, *from Verona. Whome, being now arraied in the ſame habit, yet fearefull to ſet foot forward in the forreine ground, without the countenance of ſome worthie perſonage, who might both giue him his hand at his firſt entrance, in token of welcome, and alſo grace him afterwards with a fauourable regard to win acquaintance, I humbly preſent vnto your Honour. For conſidering the qualitie of the man, a Philoſopher diſcourſing ſo deepely in all Learning, where may hee looke for better acceptance than of him, who is moſt iuſtly ſtyled, Patron of Learning? Which dignitie conferred of late vpon your H. by the generall ſuffrages of a Noble Vniuerſitie (and that for your ſingular inſight in all literature) as a complement to thoſe high places vnereunto the fauour of a moſt prudent and iudicious Princeſſe hath aduanced you, and the ſame correſpondent to the ſame wiſedom, iuſtice, and eloquence, which concurre in your perſon, like the ſeuerall beauties of the Rubie, Amethyſt, and Emeraud meeting in one faire Opal, giueth a louely luſtre to your other titles, no leſſe, than if the nine* Muſes *and* Apollo, *repreſented naturally in that rich Agat of* K. Pyrrhus, *were inſerted therein. Now if, as wee read of* * Alexander *and* * Demetrius, *two mightie monarchs, who amid their deſſeines and making conqueſts and beſieging cities, beheld otherwhiles* Apelles *and* Protogenes *how they handled their pencils; it may pleaſe your Honour betweene the managing of State-affaires vnder her Majeſtie, to caſt your eie eſtſoones vpon* Plinie *for your recreation, and ſee how liuely hee depeincteth, not* Venus Anadyomene, *drawne haply to the patterne of* Campaſpe *a courtizan; nor* Ialyſus *with his dog, in which picture,* fecit Fortuna naturam; *but euen Nature her ſelfe, the immediat mother and nource of all things vnder the Almightie; I ſhall not onely thinke him patronized thereby and ſufficiently commended to the world, but alſo acknowledge my ſelfe much deuoted to your H. and bound for euer to pray for the encreaſe thereof, with long life and true happineſſe.*

* Magnus.
* Poliorcetes.

Your Honours moſt readie at command,

Philemon Holland.

The Preface to the Reader.

HAppie were they in times paſt reputed (and not vnworthily) who had that gratious and heauenly gift, *aut facere ſcribenda, aut ſcribere legenda*: that is to ſay, either to do ſuch things as deſerued to bee written, or to write that which was worth the reading. Thoſe that could not attaine to theſe two branches of felicitie, and yet vtterly miſliked idlenes, contented themſelues in a third degree, namely to take in hand the old workes of their ancients, and by new labours to immortalize their memorie. Thus *Nicophanes* (a famous painter in his time) gaue his mind wholly to antique pictures, partly to exemplifie and take out their patternes after that in long continuance of time they were decaied; and in part to repaire and reforme the ſame, if haply by ſome iniurious accident they were defaced. The ingenious mind of this artizan thus deuoted to antiquitie, as I doe highly commend; ſo I cannot chuſe but embrace his policie, ſeeking hereby to auoid the enuie and reproofe of others. In this number I muſt range thoſe learned men in ſeuerall ages, who to illuſtrate the monuments left by former writers, haue annexed vnto them their Commentaries; to ſaue them entire and vncorrupt, haue ſet thereto iudiciall obſeruations; and to publiſh them for a generall benefit of poſteritie, haue tranſlated the ſame into their mother language. As for my ſelfe, ſince it is neither my hap nor hope to attaine to ſuch perfection, as to bring forth ſomewhat of mine owne which may quit the paines of a reader; and much leſſe to performe any action that might miniſter matter to a writer; and yet ſo farre bound vnto my natiue countrey and the bleſſed ſtate wherein I haue liued, as to render an account of my yeeres paſſed and ſtudies employed, during this long time of peace and tranquilitie, wherein (vnder the moſt gratious and happy gouernement of a peereleſſe Princeſſe, aſſiſted with ſo prudent, politique, and learned Counſell) all good literature hath had free progreſſe and flouriſhed, in no age ſo much: mee thought I owed this dutie, to leaue for my part alſo (after many others) ſome ſmall memoriall, that might giue teſtimonie another day what fruits generally this peaceable age of ours hath produced. Endeauoured I haue therefore to ſtand in this third ranke, and beſtowed thoſe houres which might be ſpared from the practiſe of my profeſſion, and the neceſſarie cares of this life, to ſatisfie my countrimen now liuing, and to gratifie the age enſuing, in this kinde. Like as therefore I haue trauelled alreadie in *Titus Liuius* a renowmed Hiſtoriographer, ſo I haue proceeded to deale with *Plinius Secundus* the elder, as famous a Philoſopher. Now albeit my intention and only ſcope was, to doe a pleaſure vnto them that could not read theſe authours in the original: yet needs I muſt confeſſe that euen my ſelfe haue not only gained thereby encreaſe of the Latine tongue (wherein theſe workes were written) but alſo growne to further knowledge of the matter and argument therein contained. For this benefit wee reape by ſtudying the bookes of ſuch ancient authours,

That

That the oftner we read them ouer, the more ſtill we find and learne in them: as beeing ſo iudiciouſly and pithily penned, that, as the Poet ſaid very well, *decies repetita placerent*. Well may the neweſt ſongs and laſt deuiſed plaies delight our ears at the firſt, and for the preſent rauiſh our ſenſes: like as horarie and earely Summer fruits content our taſt and pleaſe the appetite: but ſurely it is antiquitie that hath giuen grace, vigor, and ſtrength to writings; euen as age commendeth the moſt generous and beſt wines. In which regard, and vpon this experience of mine owne, I nothing doubt but they alſo whom I might iuſtly feare as hard cenſours of theſe my labours, will not onely pitie mee for my paines, but alſo in ſome meaſure yeeld mee thankes in the end, when either by the light of the Engliſh (if they be young ſtudents) they ſhall bee able more readily to goe away with the darke phraſe and obſcure conſtructions of the Latine; or (being great ſchollers and taking themſelues for deepe Critickes) by conferring the one with the other, haply to eſpie wherein I haue tripped, they ſhall by that meanes peruſe once againe, and conſequenly gather new profit out of that authour whom peraduenture they had laid by for many yeers as ſufficiently vnderſtood. When ſome benefit (I ſay) ſhall accrew vnto them likewiſe by this occaſion, I leſſe dread their fearefull doome, to which ſo wilfully I haue expoſed my ſelfe. Well I wiſt, that among the Athenians, order was taken by law, That an enterlude newly acted ſhould be heard with ſilence and applauſe: which cuſtome, as it was reſpectiue and fauourable to the firſt endeauours of the actours, ſo it implied an ineuitable danger of hiſſing out an vtter diſgrace, if afterwards they chanced to miſſe and faile in their parts. Hauing ſhewed my ſelfe once before vpon the ſtage, preſuming vpon this priuiledge and the curteſie of the theatre, I might haue now ſitten ſtill and ſo reſted: In mounting vp thus ſoon againe, I may ſeeme either in the aſſured confidence of mine owne worthineſſe, to proclaime a challenge to all mens cenſures; or elſe vpon a deepe conceit of ſome generall conniuencie make reckoning of an extraordinarie and wonderfull fauor. But as the choiſe that I haue made to publiſh the monuments of other men, without fathering any thing of mine owne, doth excuſe and acquit mee for the one; ſo the froward diſpoſition of carpers in theſe daies wherein wee liue, will checke the other. Howbeit conſidering ſuch paines vndergone by me one man, for the pleaſure of ſo many; ſo much time ſpent of mine, for gaining time to others; and ſome opportunities of priuat lucre ouerſlipt and loſt, to win profit vnto all; I feare not but theſe regards may deſerue a friendly acceptance, & counterweigh all defects and faults eſcaped, whatſoeuer. The perſuaſion hereof, but principally the priuitie of my affectionat loue vnto my countrey (which aſſured me of a ſafe-conduct to paſſe peaceably through their hands who are of the better ſort and well affected) induced mee to a reſolution not onely to enter vpon this new taske, but alſo to breake through all difficulties, vntill I had brought the ſame, if not to a full and abſolute perfection, yet to an end and finall concluſion. Beſides this naturall inclination and hope which carried mee this way, other motiues there were that made ſaile and ſet mee forward. I ſaw how diuerſe men before me had dealt with this authour, whiles ſome laboured to reforme whatſoeuer by iniurie of time was growne out of frame: others did their beſt to tranſlate him into their own tongue, and namely, the Italian and French: moreouer, the Title prefixed therto ſo vniuerſall as it is, to wit, *The Hiſtorie of the World*,

or

or *Reports of Nature*, imported (no doubt) that hee firſt penned it for the generall good of mankind. Ouer and beſides, the Argument enſuing full of varietie, furniſhed with diſcourſes of all matters, not appropriate to the learned only, but accommodat to the rude peiſant of the countrey; fitted for the painefull artizan in towne and citie: pertinent to the bodily health of man, woman, and child; and in one word, ſuiting with all ſorts of people liuing in a ſocietie and commonweale. To ſay nothing of the precedent giuen by the authour himſelfe who endited the ſame, not with any affected phraſe, but ſorting well with the capacitie euen of the meaneſt and moſt vnlettered: who alſo tranſlated a good part thereof out of the Greeke. What ſhould I alledge the example of former times, wherein the like hath euermore been approued and practiſed? Why ſhould any man therefore take offence hereat, and enuie this good to his naturall countrey, which was firſt meant for the whole world? and yet ſome there be ſo groſſe as to giue out, That theſe and ſuch like bookes ought not to bee publiſhed in the vulgar tongue. It is a ſhame (quoth one) that *Liuie* ſpeaketh Engliſh as hee doth: Latiniſts onely are to bee acquainted with him: as Who would ſay, the ſouldiour were to haue recourſe vnto the vniuerſitie for militarie skill and knowledge: or the ſcholler to put on armes and pitch a campe. What ſhould *Plinie* (ſaith another) bee read in Engliſh, and the myſteries couched in his bookes diuulged: as if the husbandman, the maſon, carpenter, goldſmith, painter, lapidarie, and engrauer, with other artificers, were bound to ſeeke vnto great clearkes or linguiſts for inſtructions in their ſeuerall arts. Certes, ſuch *Momi* as theſe, beſides their blind and erronious opinion, thinke not ſo honourably of their natiue countrey and mother tongue as they ought: who if they were ſo well affected that way as they ſhould be, would wiſh rather, and endeauour by all meanes to triumph now ouer the Romans in ſubduing their literature vnder the dent of the Engliſh pen, in requitall ſo the conqueſt ſometime ouer this Iſland, atchieued by the edge of their ſword. As for our ſpeech, was not Latine as common and naturall in Italie, as Engliſh here with vs. And if *Plinie* faulted not but deſerued well of the Romane name, in laying abroad the riches and hidden treaſures of Nature, in that Dialect or Idiome which was familiar to the baſeſt clowne: why ſhould any man be blamed for enterpriſing the ſemblable, to the commoditie of that countrey in which and for which he was borne. Are wee the onely nation vnder heauen vnworthie to taſt of ſuch knowledge? or is our language ſo barbarous, that it will not admit in proper tearmes a forreine phraſe? I honor them in my heart, who hauing of late daies troden the way before mee in *Plutarch*, *Tacitus*, and others, haue made good proofe, that as the tongue in an Engliſhmans head is framed ſo flexible and obſequent, that it can pronounce naturally any other language; ſo a pen in his hand is able ſufficiently to expreſſe Greeke, Latine, and Hebrew. And my hope is, that after mee there will ariſe ſome induſtrious *Flauij* who may at length *cornicum oculos configere*. For if my ſelfe, a man by profeſſion otherwiſe carried away, for gifts farre inferiour to many, and wanting ſuch helps as others bee furniſhed with, haue in ſome ſort taught thoſe to ſpeake Engliſh who were ſuppoſed very vntoward to bee brought vnto it; what may be expected at their hands, who for leiſure may attend better; in wit are more pregnant; and being graced with the opinion of men and fauour of the time, may attempt what they will, and effect whatſoeuer

uer they attempt with greater felicitie? A painfull and tedious trauaile I confeſſe it is; neither make I doubt but many doe note mee for much follie in ſpending time herein, and neglecting ſome compendious courſe of gathering good, and purſing vp pence. But when I looke backe to the example of *Plinie*, I muſt of neceſſitie condemne both mine owne ſloth, and alſo reproue the ſupine negligence of theſe daies. A courtiour he was, and great fauourit of the *Veſpaſians* both father and ſonne: an oratour beſides, and pleaded many cauſes at the barre: a martiall man withall, and ſerued often times a leader and commander in the field: within the citie of Rome hee mannaged ciuile affaires, and bare honourable offices of State. Who would not thinke but each one of theſe places would require a whole man? and yet amid theſe occaſions wherewith he was poſſeſſed, he penned Chronicles, wrate Commentaries, compiled Grammaticall treatiſes, and many other volumes which at this day are vtterly loſt. As for the Hiſtorie of Nature now in hand, which ſheweth him to be an excellent Philoſopher and a man accompliſhed in all kinds of literature (the onely monument of his that hath eſcaped all dangers, and as another Palladium beene reſerued entire vnto our time) wherein hee hath diſcourſed of all things euen from the ſtarrie heauen to the centre of the earth; a man would marueile how hee could poſſibly either write or doe any thing elſe. But conſidering the agilitie of mans ſpirit alwaies in motion: an ardent deſire to benefit poſteritie, which in theſe volumes hee hath ſo often proteſted; his indefatigable ſtudie both day and night, euen to the iniurie of nature, and the ſame continued in euerie place, as well abroad as within-houſe; in his iourney vpon the high way, where his manner was to read and to indite; in his ordinarie paſſage through the ſtreets betweene court and home, where he gaue himſelfe no reſt, but either read, or elſe found his notarie worke to write; and for that purpoſe rode vſually in an eaſie litter, with the ſaid Notarie cloſe by his ſide: leſſe wonder it is, that hee performed his ſervice to Prince and ſtate according to his calling; and withall deliuered vnto poſteritie ſo many fruits of wit and learning. For what is not the head of man able to compaſſe? eſpecially making ſaile with a feruent deſire and reſolution to ſee an end, and beſides taking the vantage of all moments, and loſing no time, whereof hee was *vnus omnium parciſſimus*. Touching his affection to ſearch into the ſecrets of Nature, it was that and nothing elſe that ſhortened his daies, and haſtened his vntimely death: for hauing liued not much aboue the middle age of man, deſirous he was to know the reaſon, Why the hill Neſuvius burned as it did? and approched ſo neare, that with the ſtrong vapours and ſmoake iſſuing from thence, his breath was ſuddenly ſtopped, and himſelfe found dead in the place: a man worthie to haue liued for euer. What remaineth now, but onely to recommend vnto my countrimen this worke of his (which for mine owne part I wiſh to bee immortall) were it not for one ſcruple to bee cleared, which at the firſt troubled my ſelfe a little, and might peraduenture otherwiſe offend ſome readers. In attributing ſo much vnto Nature, *Plinie* ſeemeth to derogat from the Almightie God, to him ὑποστατικὸν; and therefore dangerous (ſaith one) to bee diuulged. Farre be it from mee, that I ſhould publiſh any thing to corrupt mens manners, and much leſſe to preiudice Chriſtian religion. After conference therefore with ſundrie diuines about this point, whom for their authoritie I reuerence; whoſe learning I honor and embrace; and in whom for iudgement & ſyncéritie of religion

I reſt,

I reſt, confirmed I was in my firſt purpoſe, and reſolved to finiſh that which I had begun, namely, not to defraud the world of ſo rich a gem, for one ſmall bleemiſh appearing therein. And that it may appeare how I did not abound in mine owne ſence, but had regard as well to ſatisfie the conſcience of others as mine owne, I haue thought good to annex immediately hereunto, in manner of a Corollarie, the opinion of one graue and learned preacher concerning this doubt, as it was deliuered vnto mee in writing; which for that it is grounded vpon ſufficient reaſons, and according with the iudgement of the reſt, the leſſe I reſpect the raſh projects of ſome fantaſticall ſpirits: nothing doubting but the ſame will ſettle the minds of the weake, and free my labours from the taint of irreligion.

The copie of the ſaid Letter, written as touching the Tranſlation of Plinie.

MY beloued, in twentie yeeres and better, ſo many tokens of our mutuall loue paſſing betweene vs, I need not now to profeſſe my affection to your ſelfe; and my daily conuerſing with you, hath yeelded my approbation of your tedious labor in tranſlating Plinie. Theſe few lines therefore ſhall onely ſerue to witneſſe vnto others the deſerued account which for your learning I haue alwaies made of you, and my conceit of this your trauaile in opening to your countrymen the treaſurie of Nature: therein to ſee and to admire the wiſedome, power, and the goodneſſe of the onely true God, the Framer of Nature. I am not of their minds, who deſire that all humane learning in Arts and Naturall Philoſophie ſhould be reſerued vnder locke and key of ſtrange language, without the which no other man ſhould haue acceſſe vnto it: For as ſuch knowledge is a branch of that excellencie wherein man was formed, ſo the repaire thereof (though it bee not the chiefe) is yet a thing vnworthily neglected, as well in regard of our owne comfort therein gained, as for the glory of God thereby promoted. And it was the wiſdome and prouident hand of the All-ſufficient, ſo to guide the wiſe heathen in Arts and Nature, that they ſhould publiſh ſuch their skill vnto their countrimen in mother tongue: partly to correct the rudeneſſe which is in ignorance, and in part to leaue them the more inexcuſable: In Tit. 1. which regard, they may in ſome ſort be called, The Prophets and Teachers of the heathen. And though Plinie and the reſt were not able by Natures light to ſearch ſo far as to find out the God of Nature, who ſitteth in the glorie of light which none attaineth, but contra- Rom. 1. riwiſe in the vanitie of their imagination bewrayed the ignorance of fooliſh hearts, ſome doting vpon Nature her ſelfe, and others vpon ſpeciall creatures as their God: yet feare we not that Chriſtians, in ſo cleare light ſhould be ſo farre bewitched by ſuch blind teachers, as to fall before thoſe heathen Idols. Yea, though ſome of them (as namely Plinie) haue ſpoken diſhonourably of the onely true God and of his prouidence, becauſe they knew him not; which ſpeeches (if it might ſtand with the lawes of Tranſlation) I could wiſh were vtterly omitted; yet may we hope that Chriſtian men ſo long taught by the light of grace out of the holy word of God, will no leſſe therefore giue him his deſerued honour, than when they doe in like ſort heare the blaſphemie of Sanneherib king of Aſſur, who ſent to 2. Reg. 19. raile vpon the liuing God. I feare not the corrupting of vnſtable minds any thing ſo much by theſe fooliſh Gentiles which are without, as by the deceitfull ſpirit of error ſpeaking in the mouth of men within: ſuch I meane as are within the boſome of the Church. Theſe are the foxes by whom we feare the ſpoile of the Lords vines when as the grapes firſt begin to Cant. 2. cluſter; for whoſe taking I deſire that all Gods husbandmen would be more carefull. As for the ſpeeches of theſe blind heathen, the true Christian may well thereby be prouoked to extoll the mercie of God, who ſitteth in ſo glorious a light as hath daſled the ſharpeſt ſight of Nature; but for our comfort hath put a vaile vpon his glorie, and by his grace hath ſo cleared

cleered the eye of our vnderſtanding, that we might ſee his face in his beloued, and know him to be the onely true God, and his bleſſed prouidence vpon all his creatures. And Pſal.19. Rom.1. *when they ſhall perceiue that the wiſeſt clearke in natural skill could not learne by the booke* Gen.1. *of heauen and earth to know their Maker, whoſe glorie they declare, and handworkes ſet out; nor who it was that framed Nature, when by his word he firſt created them in ſuch excellencie, and then, by his bleſſing gaue, and by his prouidence working all in all, doth yet* Gen.3. Rom.8. *maintaine ſuch an operatiue power, as by the which they are ſtill continued in their* Pſal.119. & 147. *kindes: nor how it came to paſſe that Nature loſt her excellencie in all creatures, and her power vnto good was not onely weakened (whence we ſee her faile in many of her purpoſes) but alſo peruerted vnto euill; then (I ſay) they will the more be ſtirred vp by Gods grace to make reuerent account of the holy Scriptures, which God in rich mercie hath giuen to them to be a light in all things for to direct them through the errors in Natures blindneſſe, and to bring them to the heauenly Jeruſalem and happie world of all the holie where he dwelleth, whom they worſhip in vnitie and trinitie. Proceed then my beloued friend to bring vnto the birth your ſecond labour; whereof I pray that God may haue honour in the praiſe of his works throughout nature, and wiſh you comfort in good acceptance with the reader, and your countrie vſe and pleaſure in the skill thereof. Vnto him which onely hath immortalitie and dwelleth in that light which none attaineth, to God only wiſe be all honour and glorie. Iunij xij. 1601.*

Your louing friend in the Lord,

H. F.

THE FIRST BOOKE OF THE HISTORIE OF NATVRE, WRITTEN BY C. PLINIVS SECVNDVS.

*The Preface or Epiſtle Dedicatorie to * Prince Veſpaſian, his [friend] C. Plinius Secundus ſendeth greeting.*

* Titum

THeſe bookes containing the Hiſtorie of Nature, which a few daies ſince I brought to light (a new worke in Latine, and namely among the Romanes your Citizens and Countrymen) I purpoſe by this Epiſtle of mine to preſent and conſecrate vnto you, moſt ſweet and gentle Prince [for * this title accordeth fitteſt vnto you, ſeeing that the name of [* Moſt mighty] forteth well with the age of the Emperor your father:] which haply might ſeeme boldneſſe and preſumption in me, but that I know how at other times * *you were wont to haue ſome good opinion of my toies and fooleries.* Where, by the way, you muſt giue me leaue to mollifie a little the verſes which I borrow of my *countryman Catullus.* (See alſo how I light vpon * *a word* vſed among ſouldiers, which you are acquainted with, ſince time we ſerued both together in the camp:) For he as you wot full well, changing the former ſillables of his verſes one for another, made himſelfe ſomewhat more harſh than he would ſeeme to be vnto the fine eares of his familiar friends, the *Veranioli & Fabulli.* And withall, I would be thought by this my malapert writing vnto you, to ſatisfie one point, which, as you complained in your anſwer of late to another rude & audacious letter of mine, I had not performed, to wit, That all the world might ſee (as it were vpon record) how the Empire is managed by you and your father equally: and notwithſtanding this imperial majeſtie wherunto you are called, yet is your affability and maner of conuerſing with your old friends, fellow-like, & the ſame that alwaies heretofore it had been. For albeit you haue triumphed with him for your noble victories, bin Cenſor in your time, and Conſull * ſix times, executed the ſacred authoritie of the Tribunes, Patrones, and protectors of the Commons of Rome, together with him: albeit I ſay you haue otherwiſe ſhewed your noble heart in honouring and gracing both the court of the Emperor your father, and alſo the whole ſtate of Knights and Gentlemen of Rome, whiles you were captaine of the guard, and grand-maſter of his houſe and roiall pallace (in which places all, you carried your ſelfe reſpectiuely to the good of the Commonweale) yet to all your friends, and eſpecially to my ſelfe, you haue borne the ſame countenance as in times paſt within the campe, when wee ſerued vnder the ſame colours, and lodged together in one pauilion. So as in all this greatneſſe and high eſtate whereunto you are mounted, there is no other change and alteration ſeene in your perſon but this, That your power is now anſwerable to your will, & able you are to doe and performe that good which you euer meant, and ſtill intend.

* Suauiſſimus

* Maximus

* Namque tu ſolebas, Meas eſſe aliquid putare nugas.

* Conterraneum

It ſeemes that *Pliny* read thus in *Catullus*, Tu putare namq; Nugas eſſe aliquid meas ſoleas, which ſpeech indeed was but an hard compoſition and couching of the words.

* Sexies, or rather Septies, out of *Suetonius.*

And howſoeuer this great maieſtie, reſplendent in you on euery ſide, in regard of thoſe high dignities aboue rehearſed, may induce the whole world beſides to reuerence your perſon in all obeiſance; yet I for my part am armed onely with a kinde of audacitie and confidence to ſhew my dutie and devoire vnto you, after a more familiar manner than others: and therfore, this my aduenturous raſhnes, whatſoeuer, you muſt impute vnto your own courteſie: and if I chaunce to fault therein, thanke your ſelfe therefore, and ſeeke pardon at your own hands. Well, baſhfulneſſe I haue laid aſide, and put on a bold face, and all to no purpoſe. For why? although your gentleneſſe and humanitie be one way attractiue, and inducth me to draw neare vnto your preſence, yet another way you appeare in great maieſtie: the ſublimitie I ſay of your mind, your deepe reach, high conceit, and rare perfections, ſet me as far back: no lictors & huiſhers marching before you, ſo much, that I dare not approach. In the firſt place: was there euer any man, whoſe words paſſed from him more powerfull, & who more truly might be ſaid to flaſh forth as lightning the force of eloquence? What Tribune was there known at any time to perſuade & moue the people with good language, more effectually? How admirable was your vtterance in thoſe publicke Orations, wherin you thundred out the praiſe-worthy acts of the Emperor your father, that all the grand-place rung therwith? what a ſingular teſtimonie ſhewed you of rare kindneſſe & affection to your brother, in ſetting out his praiſes to the full? As for your skill in Poetrie, how excellent, how accompliſhed is it. Oh the bounty of your mind! Oh the fertility of your pregnant ſpirit! that you ſhould find means to imitate, yea, and to match your * brother in that kind. But who is able boldly to giue an eſtimate of theſe gifts to their worth? How may a man enter into the due conſideration therof, without feare of exquiſit cenſure, and exact iudgement of your wit, eſpecially being prouoked and challenged thereunto as you are. For to ſay a truth, the caſe of them who publiſh a worke in generall tearmes, is farre vnlike to theirs that will ſeem to dedicat it particularly, and by name, to a Prince ſo iudicious as your ſelfe. For had I ſet forth this my booke ſimply, and ſtaied there without any perſonal dedication, thē I might haue come vpon you & ſaid, Sir, what ſhould a mightie Commander and Generall of the field, as you are, buſie himſelfe to read ſuch matters? written theſe treatiſes were to the capacitie of the vulgar people, for baſe commons, rude husbandmen, and peaſants of the countrie, for poore artiſans; and in one word, to gratifie them who had no other means of great emploiment, nor time & leiſure but to ſtudie vpon ſuch points and nothing elſe: What ſhould you make your ſelfe a cenſor of this worke? and verily, when I made firſt ſhew of this enterpriſe of mine, I never reckned you in the number of thoſe iudges that ſhould paſſe their ſentence vpon theſe writings; I wiſt full well, that you were a greater perſon far, & I ſuppoſed that you would neuer abaſe your ſelfe nor ſtoupe ſo low as to read this booke of mine. Ouer and beſides, a common caſe it is, and incident to men of deepe learning and great conceit, that otherwhiles exception may be taken againſt them, and their iudgement reiected in this behalfe. Euen *M. Tullius* that renowmed Orator, and who for wit and learning had not his fellow, taking the vantage of that libertie, vſeth the benefit thereof: and (whereat wee may well maruell) maintaineth the action by an aduocate, and taketh example (for his defence) from *Lucilius*: for in one part of his workes thus bee ſaith, *I would not haue learned* Perſius *to read theſe bookes of mine, loth I am that bee ſhould cenſure mee.*

* *Domitian Veſpaſian was vſed an ex- cellent Poet.*

As

As for *Lælius Decimus*, I am content to ſubmit them to his opinion. Now if ſuch an one as *Lucilius*, who was the firſt that durſt controule the writing of others, and tooke vpon him to ſcoffe at their imperfections, had rather thus to ſay; if *Cicero* tooke occaſion to borrow the ſaid ſpeech of him for to ſerue his owne turne, and namely in his Treatiſe of Politiques, where he wrote of a Commonweal; how much greater cauſe haue I to diſtruſt my ſelf, and to decline and auoid the cenſure of ſome judge of deepe vnderſtanding? But cut I am from this refuge and meanes of defence, in that I expreſſely make choiſe of you in this dedication of my worke: for one thing it is to haue a judge, either pricked by pluralitie of voices, or caſt vpon a man by drawing lots; and a farre other thing to chuſe and nominate him from all others: and great difference there is between that cheare and prouiſion which we make for a gheſt ſolemnely bidden and inuited, and the ſuddaine fare and intertainement which is ready for a ſtranger who commeth to our houſe vnlooked for. *Cato*, that profeſſed enemie of ambition, vain-glory, and indirect ſuit for offices, who took as great contentment in thoſe eſtates and dignities which he refuſed and reiected, as in them which he enioied, attained to this good name of vprightneſſe and ſinceritie, that when in the hotteſt broile about election of Magiſtrates that euer was in his time, they that ſtood therefore, put into his hands their mony vpon truſt, as a cautionary pawne and aſſurance of their integritie and fidelitie that way; they profeſſed that they did it in teſtimony of their conceit of his equitie and innocence, the chiefe and onely thing that a man is to regard in this life: whereupon enſued the noble and memorable exclamation of *M. Cicero*, who ſpeaking of the ſaid *Cato*, brake out into theſe words: Oh gentle *M. Portius*, how happy and bleſſed art thou, whom no man was euer ſo hardie as to ſollicite to any leaud thing, or contrary to right and honeſtie! *L. Scipio*, ſurnamed *Aſiaticus*, at what time as hee appealed vnto the Tribunes of the Commons, and beſought their lawfull fauour (among whom, *C. Gracchus* was one, a man whom hee tooke for his mortall enemie) preſuming vpon the goodneſſe of his cauſe, gaue out and ſaid, That his very enemies, if they were his iudges, could not chuſe but quit him, and giue ſentence on his ſide. Thus wee ſee how euerie man maketh him peremtorily the ſupreme and higheſt iudge of his cauſe, whom himſelfe chuſeth and appealeth vnto: which manner of choiſe the Latines call *Prouocatio*. As for your ſelfe verily, who are ſet in the moſt eminent & chiefe place among men, and otherwiſe endued with ſingular eloquence and profound knowledge, no maruell is it, if thoſe that doe their dutie vnto you, ſalute you, kiſſe your hand, and come with great reſpect and reuerence: In which regard, exceeding care aboue all things would be had, that whatſoeuer is ſaid or dedicated vnto you, may beſeem your perſon, and be worth acceptation. And yet the gods reject not the humble prayers of poore countrey peaſants, yea, and of manie nations, who offer nothing but milke vnto them: and ſuch as haue no Incenſe, find grace and fauour many times with the oblation of a plaine cake made onely of Meale and ſalt; and neuer was any man blamed yet for his deuotion to the gods, ſo he offered according to his abilitie, were the thing neuer ſo ſimple.

For mine owne part, challenged I may be more ſtill for this my importune and inconſiderat boldneſſe, in that I would ſeeme to preſent theſe bookes vnto you, compriſed of ſo ſlender ſtuffe and matter as they be: for therein can be touched no

great wit (which otherwiſe in me was euer meane and ſimple) neither admit they any digreſſions, orations, ſpeeches, and diſcourſes, ne yet admirable caſes and variable chanſes, or any other occurrent, either pleaſant to rehearſe, or delectable to heare. The truth is this, the nature of all things in this world, that is to ſay, matters concerning our daily and ordinarie life, are here deciphered and declared, and that in barrein terms, without any goodly ſhew of gay and glorious phraſes: and whatſoeuer I haue put downe, concerne it doth the baſeſt points thereof, inſomuch as for the moſt part I am to deliuer the thing in hand, either in ruſticall ſpeech, or elſe in forraine, nay, in barbarous language, ſuch alſo as may not well be vttered, but with reſeruing honour to the hearers, and reuerence to the readers.

Moreouer, the way that I haue entred into, hath not bin troden beforetime by other writers, being indeed ſo ſtrange and vncouth, as a mans mind would not willingly trauell therin. No Latin author among vs hath hitherto once ventured vpon the ſame argument, no one Grecian whatſoeuer hath gone through it and handled all: and no maruell, for many of vs loue not to take any paines, but ſtudy rather to pen matters of delight and pleaſure. True it is, I muſt needs ſay, that others haue made profeſſion hereof, but they haue done it with ſuch ſubtiltie and deepeneſſe, that all their trauels and writings by that means, lie as it were dead and buried in darkeneſſe. Now come I, and take vpon me to ſpeak of euery thing, and to gather as it were a compleat body of arts and ſciences (which the Greeks call ἐγκυκλοπαιδείαν) that are either altogether vnknowne, or become doubtfull, through the ouermuch curioſitie of fine wits: again, other matters are deciphered in ſuch long diſcourſes, that they are tedious to the readers, inſomuch as they loath and abhor them. A difficult enterpriſe it is therfore to make old ſtuffe new, to giue authoritie & credit to nouelties, to poliſh and ſmooth that which is worne and out of vſe, to ſet a gloſſe and luſtre vpon that which is dim and darke, to grace & countenance things diſdained, to procure beleefe to matters doubtfull; & in one word, to reduce nature to all, and all to their own nature. And verily to giue the attempt only and ſhew a deſire to effect ſuch a deſſeigne as this, although the ſame be not brought about and compaſſed, were a braue and magnificent enterpriſe. Certes of this ſpirit am I, that thoſe learned men and great ſtudents, who making no ſtay, but breaking through al difficulties, haue preferred the profit of poſteritie before the tickling and pleaſure of itching eares in theſe daies; which I may proteſt that I haue aimed at, not in this worke only, but alſo in other of my bookes alreadie: and I profeſſe, that I wonder much at *T. Liuius*, otherwiſe a moſt renowned & famous writer, who in a preface to one of his books of the Roman hiſtory which hee cõpiled from the foundation of Rome, thus proteſted, That hee had gotten glorie ynough by his former writing, and might ſit ſtill now & take his eaſe, but that his mind was ſo reſtleſſe, and ſo ill could abide repoſe, that contrariwiſe it was fed and nouriſhed with trauel, & nothing elſe. But ſurely me thinks, in finiſhing thoſe Chronicles, he ſhould in dutie haue reſpected the glory of that people which had conquered the World, and aduanced the honour of the Romane name, rather than diſplaied his owne praiſe and commendation: Ywis, his demerit had beene the greater, to haue continued his ſtory as he did, for loue of the ſubiect matter, and not for his priuat pleaſure; to haue I ſay performed that peece of worke more to gratifie the ſtate of Rome, than to content his owne minde and affection. As touching my ſelfe (foraſmuch as *Domitius Piſo* ſaith, That bookes ought to be

to

treaſuries & ſtore houſes indeed, and not bare and ſimple writings) I may be bold to ſay and averre, That in 36 bookes I haue compriſed 20000 things, all worthie of regard & conſideration, which I haue recollected out of 2000 volumes or therabout, that I haue diligently read (and yet very few of them there be that; men learned otherwiſe, and ſtudious, dare meddle withall, for the deepe matter and hidden ſecrets therein contained) and thoſe written by 100 ſeuerall elect and approued authors: beſides a world of other matters, which either were vnknowne to our forefathers and former writers, or elſe afterward inuented by their poſteritie. And yet I nothing doubt that many things there be, which either ſurpaſſe our knowledge, or elſe our memorie hath ouerſlipt: for men we are, and men emploied in many affaires. Moreouer, conſidered it would be, that theſe ſtudies wee follow at vacant times and ſtolne houres, that is to ſay by night ſeaſon onely; to the end that you may know, how wee to accompliſh this haue neglected no time which was due vnto your ſeruice: The daies we wholly employ and ſpend in attendance about your perſon; we ſleepe onely to ſatiſfie nature, euen as much as our health requireth, and no more; contenting our ſelves with this reward, That whiles wee ſtudy and muſe (as *Varro* ſaith) vpon theſe things in our cloſet, we gaine ſo many houres to our life; for ſurely we liue then only, when we watch and be awake. Conſidering now thoſe occaſions, thoſe lets and hinderances aboue-named, I had no reaſon to preſume or promiſe much; but in that you haue emboldened me to dedicate my bookes vnto you, your ſelfe performeth whatſoeuer in me is wanting: not that I truſt vpon the goodneſſe and worth of the worke, ſo much, as that by this means it will be better eſteemed and ſhew more vendible: for many things there be that ſeeme right deare and be holden for pretious, only becauſe they are conſecrate to ſome ſacred temples.

As for vs verily, we haue written of you all, your father *Veſpaſian*, your ſelfe, and your brother *Domitian*, in a large volume which wee compiled touching the hiſtorie of our times, beginning there where *Auſidius Baſſus* ended. Now if you demand and aske me, Where that hiſtorie is? I anſwer, that finiſhed it was long ſince, and by this time is iuſtified and approued true by your deeds: otherwiſe I was determined to leaue it vnto my heire, and giue order that it ſhould be publiſhed after my death, leſt in my life time I might haue bin thought to haue curried fauour of thoſe, whoſe acts I ſeemed to pen with flatterie, & beyond all truth. And therfore in this action I do both them a great fauour who haply were ill inded before me to put forth the like Chronicle, and the poſteritie alſo which ſhall come after; who, I make reckning and know, will enter into the liſts with vs, like as we haue done with our predeceſſors. A ſufficient argument of this my good mind & frank hart that way you ſhal haue by this, That in the front of theſe books now in hand, I haue ſet down the very names of thoſe writers, whoſe help I haue vſed in the compiling of thẽ: for I haue euer bin of this opinion, That it is the part of an honeſt minded man, & one that is ful of grace & modeſty, to confeſſe frankly by whom he hath profited & gotte any good: not as many of thoſe vnthankful perſons haue done, whom I haue alledged for my authors. For to tell you a plain truth, know thus much from me, that in conferring thẽ together about this worke of mine, I haue met with ſome of our moderne writers, who word for word haue exemplified & copied out whole books of old authors, and neuer vouchſafed ſo much as the naming of them, but haue taken their labors & trauels to themſelues.

And

And this they haue not done in that courage and spirit to imitate, yea & to match them, as *Virgil* did *Homer*: much lesse haue they shewed that simplicitie and apert proceeding of *Cicero*, who in his bookes of Policie and Common-weale professeth himselfe to hold with *Plato*; in his Consolatorie Epistle written to his daughter, confesseth and saith plainely thus, I follow *Crantor*, and *Panætius* likewise in his Treatise concerning Offices. Which worthy monuments of his (as you know well) deserue not onely to be seene, handled, and read daily, but also to be learned by heart euery word. Certes, I hold it for a point of a base and seruile mind, and wherein there is no goodnesse at al, to chuse rather to be surprised and taken in theft, than to bring home borrowed good, or to repay a due debt, especially when the occupying, vse, and interest thereof, hath gained a man as much as the principall.

Now as touching the titles and inscriptions of Bookes, the Greekes therein haue a wonderfull grace and great felicitie: some haue intituled them κέρας, whereby they would giue vs to vnderstand of A sweet hony-combe:* others κέρας Ἀμαλθείας, that is to say, The horne of plenty and store: in such sort, that whosoeuer readeth these goodly titles, must needs hope for some great matters in such bookes, and as the proverb goeth, looke to drinke there or else no where, a good draught of hens milke. You shall haue moreouer their bookes set out with these glorious inscriptions, The Muses, The * Pandects, * Enchiridion, * Antidotes, * Treasurie. Goodly names all, and such, as who would not make default of appearance in court, and forfeit a recognisance or obligation, to vnclaspe such books and turne ouer the leafe? But let a man enter into them and reade forward, Lord! how little or no substance at all shall he find within the verie mids, answerable to that braue shew in the front or outside thereof? As for our countreymen (Latines I meane, and Romans) they be nothing so fine and curious as the Greeks, grosse are they in comparison of them in giuing titles to their books: they come with their Antiquities, Examples and Arts, and those also be such authors as are of the most pleasant and finest inuention amongst them all. *Valerius* who (as I take it) was named *Antias*, both for that hee was a Citizen of Antium, and also because the ancestors of his house were so called, was the first that gaue to a booke of his owne making, the title of *Lucubratio*, as a man would say, Candle-worke or Night-studie. *Varro*, he teameth some of his Satyres *Sesculyxes* and *Flexibula*. *Diodorus* among the Greekes was the first that laied aside royish titles, and because he would giue some braue name to his Chronicles, entituled it *Bibliotheca*, *i.* a Librarie. *Apion* the famous Grammarian, euen hee whom *Tiberius Cæsar* called the Cymball of the world (whereas indeed hee deserued to bee named a Timbrill or Drum rather for ringing and sounding publique fame) was so vain-glorious, that he supposed all those immortalized, vnto whom hee wrote or composed any pamphlet whatsoeuer. For mine owne part, although I nothing repent mee that I haue deuised no pretier Title for my Booke than plaine *Naturalis Historia*, *i.* The roports of Nature, without more ceremonie; yet because I would not bethought altogether to course and rate the Greekes, I can be content, nay I am willing to bee thought in this behalfe like vnto those excellent grand masters in Greece, for Painting and Imagerie, whom you shall finde in these Reports of mine, to haue entituled those rare and absolute peeces of worke (which the more wee view and looke vpon, the more wee admire and wonder

* To wit, *Helius Metiustus*.

* Containing all things, as *Tyro Tullius* did.

* A manuel to be carried al waies in hand.

* Medow.

* A Table or Index.

wonder at for their perfection) with halfe titles and vnperfect inscriptions, in this manner, *Apelles* * *went in hand with this Picture:* or, *Polycletus was a making this Image:* as if they were but begun, neuer finished and laid out of their hands: which was done (no doubt) to this end, that for all the varietie and diuersitie of mens iudgements scanning of their workemanship, yet the Artificer thereby had recourse to make excuse; had meanes (I say) to craue and haue pardon for any faults and imperfections that could be found, as if hee meant to haue amended any thing therein amisse or wanting, in case hee had not beene cut off and preuented by death. These noble workemen therefore herein shewed right great modestie, that they set superscriptions vpon all their painted tables, pourtraitures and personages, as if they had beene the last peeces of their workemanship, and themselues disabled by vnexpected death that they could not make a finall end of any one of them: for there were not knowne (as I take it) aboue three in all, which had their absolute titles written vpon them in this forme, *Ille fecit*, *i.* This *Apelles* wrought: and those pictures will I write of in place conuenient. By which it appeared euidently, that the said three tables were fully finished, and that the workeman was so highly contented with their perfection, that he feared the censure of no man: No maruaile then, if all three were so much enuied and admired throughout the world, no marueile if euerie man desired to be master of them.

* *Apelles faciebat.*

Now For my selfe, I know full well and confesse freely, that many more things may be added, not to this story alone, but to all my bookes that I haue put forth alreadie: which I speake by the way, because I would preuent and auoid those fault-finders abroad those correctors and * scourgers of *Homer*, (for surely that is their very name (because I hear say there be certaine Stoike Philosophers, professed Logicians, yea, and Epicurians also (for at Grammarians hands and Criticks I neuer looked for other) who are with child still and trauaile vntill they be deliuered of somewhat against my bookes which I haue set forth as touching Grammer: and for this ten yeares space, nothing is come to light, but euermore the fruit miscarieth belike before the full time, as the slip of an vnperfect birth; whereas in lesse space than so, the verie Elephant bringeth forth her calfe, be it neuer so big. But this troubleth me neuer a whit, for I am not ignorant that a silly woman, euen an harlot, and no better, durst encounter *Theophrastus*, and write a booke against him, notwithstanding hee was a man of such incomparable eloquence that thereupon hee came by his diuine name *Theophrastus*: from whence arose this prouerbe and by-word, *Marie then go chuse a tree to hang thy selfe. And surely I cannot containe and hold my tongue, but I must needs set downe the verie words of *Cato Censorius*, so pertinent to this purpose; whereby it may appeare, that euen *Cato* himselfe a most worthy personage, who wrote of militarie Discipline, who had beene brought vp and trained to feats of warre vnder Great *Scipio Africanus*, or rather indeed vnder *Annibal*, who in the end could not endure *Africanus* himselfe, but was able to controll him in martiall affaires: and who besides hauing the conduct as L. Generall of the Romane armie, atchieued the better hand ouer his enemies in the field, and returned with victorie: this *Cato* (I say) could not auoid such backbiters and slanderers, but knowing that there would be many of them readie to purchase themselues some name and reputation by reproouing the knowledge and skill of others, brake out into

* *Homeromastiges.*

* If women may be allowed to controll mens writings, we may be wearie of our liues and goe hang our selues well enough.

a cer-

a certaine ſpeech againſt them: And what was it? I know right well (quoth hee, in that booke aforeſaid) that if theſe writings of mine come abroad once and be publiſhed to the view of the world, there will be many ſtep forth to quarrell and cauill therewith; ſuch fellows ſooneſt and moſt of all who are quite void of vertue and honeſtie, and know not what belongeth to true honour. But ſurely ſay what they will, I let their words runne by, like raine water. It was a prettie ſpeech alſo and a pleaſant apothegme, that *Plancus* vttered in the ſemblable caſe: for being informed that *Aſinius Pollio* was deuiſing and framing certaine inuectiue Orations againſt him, which ſhould be ſet forth either by himſelfe or his children, after the deceaſe of *Plancus* and not before, to the end that they might not bee anſwered by him; hee ſaid readily by way of a ſcoffe, That none but vaine bugs and hobgoblings vſe to fight with the dead: with which word hee gaue thoſe orations ſuch a counterbuffe, that (by the iudgement of the learned) none were accounted afterward more impudent and ſhameleſſe than they. For mine owne part, being ſure that theſe buſie bodies ſhall neuer be able to bite me (and verily *Cato* hath giuen ſuch fellowes a proper name, and called them *Vitiligatores*, by a tearme elegantly compounded of vices and quarrels: for to ſay a truth, what did they elſe but picke quarrels and make brawls?) I will proceed and go one ſtill in my intended purpoſe.

Now to conclude and knit vp mine Epiſtle: knowing as I doe, that for the good of the Commonweale, you ſhould be ſpared and not impeached by any priuat buſineſſe of your owne, and namely in peruſing theſe long volumes of mine; to preuent this trouble therefore, I haue adioyned immediatly to this Epiſtle, and prefixed before theſe books, the Summarie or Contents of euery one: and very carefully haue I endeauoured, that you ſhould not need to read them throughout, whereby all others alſo after your example, may eaſe themſelues of the like labour: and as any man is deſirous to know this or that, he may ſeeke and readily find in what place to meet with the ſame. This learned I of *Valerius Sorranus* one of our owne Latine writers, who hath done the like before me and ſet an Index to theſe Bookes which he entituled Enuemion.

THE INVENTORIE OR INDEX

CONTAINING THE CONTENTS OF XXXVII BOOKS, TOVCHING THE HISTORIE OF NATVRE, WRITTEN BY C. PLINIVS SECVNDVS, WHICH IS RECEIVED FOR THE FIRST BOOKE OF THEM.

¶ *The Summarie of euery Booke.*

THe firſt Booke containeth the Dedicatorie Epiſtle or Preface of the whole worke, addreſſed to *Titus Veſpaſian* the Emperour. Alſo the names of the Authors out of which hee gathered the Hiſtorie, which he proſecuteth in 36 Bookes: together with the Summarie of euerie Chapter: and beginneth, *The Books, &c.*

The ſecond, treateth of the World, Elements, and Starres: and beginneth thus, *The World, &c.*

The third, deſcribeth the firſt and ſecond gulfe, which the Mediterranean ſea maketh in Europe: and beginneth in this manner, *Hitherto, &c.*

The fourth, compriſeth the third gulfe of Europe, beginning, *The third, &c.*

The fifth, containeth the deſcription of Affricke, and beginneth thus, *Africke, &c.*

The ſixt, handleth the Coſmographie of Aſia, beginning thus, *The ſea called, &c.*

The ſeuenth treateth of man, and his inuentions, beginning, *Thus as you ſee, &c.*

The eighth ſheweth vnto vs, land creatures and their kindes, and beginneth after this manner, *Paſſe we now, &c.*

The ninth, laieth before vs all fiſhes, and creatures of the water, beginning in this wiſe, *I haue thus ſhewed, &c.*

The tenth ſpeakes of flying foules and birds, and beginneth thus, *It followeth, &c.*

The eleuenth telleth vs of Inſects, and beginneth thus, *It remaineth now, &c.*

The twelfth treateth of drugs and odoriferous plants, beginning, *Thus you &c.*

The thirteenth deſcribeth ſtrange and forreine trees: beginning with theſe words, *Thus farre forth, &c.*

The fourteenth ſheweth of vine-plants, &c. beginning thus, *Thus far forth, &c.*

The fifteenth comprehendeth all fruitfull trees, thus beginning, *There were, &c.*

The ſixteenth deſcribeth vnto vs all wild trees, beginning with, *Hitherto, &c.*

The ſeuenteenth containeth tame trees within hortyards, and beginneth with theſe words, *As touching the nature &c.*

The eighteenth booke treateth of the nature of corne, and all ſorts thereof, together with the profeſſion of husbandmen, and agriculture, beginning after this manner, *Now followeth, &c.*

The nineteenth diſcourſeth of Flax, Spart, and Gardenage, beginning after this manner, *In the former booke,&c.*

The twentieth ſheweth of garden herbs, good to ſerue both the kitchin for meat, and the Apothecaries ſhop for medicine, & beginneth thus, *Now will we,&c.*

The one and twentieth treateth of flours and garlands, & beginneth, *In Cato,&c.*

The two and twenty containeth the chaplets and medicines made of hearbes, with this beginning, *Such is the perfection,&c.*

The three and twentie ſheweth the medicinable vertues of wine, and tame trees growing in hortyards, beginning thus, *Thus haue we,&c.*

The foure and twentie declareth the properties of wild trees ſeruing in Phyſick, beginning thus, *Nature,&c.*

The fiue and twentie treateth of the herbes in the field comming vp of their own accord, and thus beginneth, *The excellencie,&c.*

The ſix and twentie ſheweth of many new and ſtrange maladies, the medicinable vertues alſo of certaine herbes, according to ſundry diſeaſes, beginning thus, *The very face,&c.*

The ſeuen and twenty goeth forward to certaine other hearbes and their medicines, and thus beginneth. *Certes,&c.*

The eight and twentie ſetteth downe certaine receits of remedies in Phyſicke, drawne from out of man and other bigger creatures, and it beginneth in this manner, *Heretofore,&c.*

The nine and twentie treateth of the firſt authours and inuentors of Phyſicke, alſo of medicines taken from other creatures, and beginneth, *The nature,&c.*

The thirtieth booke ſpeaketh of Magicke, and certaine medicines appropriat to the parts and members of mans bodie, beginning thus, *The vanitie,&c.*

The one and thirtie containeth the medicinable vertues of fiſhes and water creatures, with this beginning, *Now follow,&c.*

The two and thirtie ſheweth other properties of fiſhes, &c. and beginneth in this manner, *Now are we come,&c.*

The three and thirtie treateth of gold and ſiluer mines, and hath this beginning, *Time it is,&c.*

The foure and thirtie ſpeaketh of copper and braſſe mines, alſo of lead, alſo of excellent braſſe-founders and workemen in copper, beginning after this manner, *In the next place,&c.*

The fiue and thirtie diſcourſeth of painting, colour, and painters, beginning in this ſort, *The diſcourſe,&c.*

The ſix and thirtie treateth of marble and ſtone for building, and hath this beginning, *It remaineth,&c.*

The ſeuen and thirtie concludeth with pretious ſtones, and beginneth at theſe words, *To the end that,&c.*

¶ IN

¶ IN THE SECOND BOOKE IS CONTAINED the diſcourſe of the World, of cœleſtiall impreſſions and meteors, *as alſo of them that appeare in the Aire, and vpon Earth.*

Chap.

1. Whether the World be finite and limited within certaine dimenſions or no? whether there be many, or but one?
2. The forme and figure of Heauen and the world.
3. The motion of Heauen.
4. Why the world is called Mundus?
5. Of the Elements.
6. Of the ſeuen Planets.
7. Concerning God.
8. The nature of the fixed ſtarres and Planets: their courſe and reuolution.
9. The nature of the Moone.
10. The eclipſe of Sun and Moone: alſo of the night.
11. The bigneſſe of ſtarres.
12. Diuerſe inuentions of men, and their obſeruations touching the cœleſtiall bodies.
13. Of Eclipſes.
14. The motion of the Moone.
15. Generall rules or canons touching planets or lights.
16. The reaſon why the ſame planets ſeeme higher or lower at ſundry times.
17. Generall rules concerning the planets or wandring ſtars.
18. What is the cauſe that planets change their colours?
19. The courſe of the Sunne: his motion: and from whence proceedeth the inequalitie of daies.
20. Why lightenings be aſſigned to *Iupiter*.
21. The diſtances betweene the planets.
22. The harmonie of ſtars and planets.
23. The geometrie and dimenſions of the world.
24. Of ſtars appearing ſodainly.
25. Of comets or blaſing ſtars, and other prodigious appearances in the skie: their nature, ſituation, and ſundry kinds.
26. The opinion of *Hipparchus* the Philoſopher as touching the ſtars, fire-lights, lamps, pillars or beames of fire, burning darts, gapings of the skie, and other ſuch impreſſions, by way of example.
27. Strange colours appearing in the firmament.
28. Flames and leams ſeene in the skie.
29. Circles of guirlands ſhewing aboue.
30. Of cœleſtiall circles and guirlands that continue not, but ſoone paſſe.
31. Of many Suns.
32. Of many Moones.
33. Of nights as light as day.
34. Of meteors reſembling fierie targuets.
35. A ſtrange and wonderfull apparition in the skie.
36. The extraordinarie ſhooting and motion of ſtars.
37. Of the ſtars named Caſtor and Pollux.
38. Of the Aire.
39. Of certaine ſet times and ſeaſons.
40. The power of the Dog-ſtar.
41. The ſundrie influences of ſtars according to the ſeaſons and degrees of the ſignes.
42. The cauſes of raine, wind, and clouds.
43. Of thunder and lightning.
44. Whereupon commeth the redoubling of the voice, called Echo.
45. Of winds againe.
46. Diuerſe conſiderations obſerued in the nature of winds.
47. Many ſorts of winds.
48. Of ſodaine blaſts and whirle-puffs.
49. Other ſtrange kinds of tempeſts & ſtorms.
50. In what regions there fall thunderbolts.
51. Diuers ſorts of lightnings, and wonderous accidents by them occaſioned.
52. The obſeruations [of the Tuſcanes in old time] as touching lightening.
53. Conjuring for to raiſe lightning.
54. Generall rules concerning leames and flaſhes of lightning.
55. What things be exempt and ſecured from lightning and thunderbolts.
56. Of monſtrous and prodigious ſhowres of raine,

Chap.
raine, namely of milke, bloud, flesh, yron, woll, bricke, and tyle.
57. The rattling of harnesse and armour: the found also of trumpets heard from heauen.
58. Of stones falling from heauen.
59. Of the Rain-bow.
60. Of Haile, Snow, frost, Mists, and Dew.
61. Of diuers formes and shapes represented in clouds.
62. The particular propertie of the skie in certaine places.
63. The nature of the Earth.
64. The forme and figure of the earth.
65. Of the Antipodes: and whether there bee any such. Also, as touching the roundnesse of the water.
66. How the water resteth vpon the Earth.
67. Of Seas and riuers nauigable.
68. What parts of the earth be habitable.
69. That the earth is in the mids of the world.
70. From whence proceedeth the inequalitie obserued in the rising and eleuation of the stars. Of the eclipse: where it is, & wherfore.
71. The reason of the day-light vpon earth.
72. A discourse thereof according to the Gnomon: also of the first Sun-dyall.
73. In what places and at what times there are no shadows cast.
74. Where the shadows fall opposite and contrary twice in the yeare.
75. Where the dayes bee longest, and where shortest.
76. Likewise of Dyals and Quadrants.
77. The diuers obseruations and acceptations of the day.
78. The diuersities of regions, and the reason thereof.
79. Of Earthquakes.
80. Of the chinks and openinst of the earth.
81. Signes of earthquake toward.
82. Remedies and helps againg earthquakes comming.
83. Strange and prodigious wonders seen one time in the earth.
84. Miraculous accidents as touching earthquake.

Chap.
85. In what parts the seas went backe.
86. Islands appearing new out of the sea.
87. What Islands haue thus shewed, and at what times.
88. Into what lands the seas haue broken perforce.
89. What Islands haue bin ioyned to the continent.
90. What lands haue perished by water and become all sea.
91. Of lands that haue settled and beene swallowed vp of themselues.
92. What cities haue beene ouerflowed and drowned by the sea.
93. Wonderfull strange things as touching some lands.
94. Of certaine lands that alwaies suffer earthquake.
95. Of Islands that flote continually.
96. In what countries of the world it never raineth: also of many miracles as well of the earth as other elements hudled vp pell mell together.
97. The reason of the Sea-tides, as well ebbing as flowing, and where the sea floweth extraordinarily.
98. Wonderfull things obserued in the sea.
99. The power of the Moone ouer Sea and land.
100. The power of the Sun: and the reason why the sea is salt.
101. Moreouer, as touching the nature of the Moone.
102. Where the sea is deepest.
103. Admirable obseruations in fresh waters, as well of fountaines as riuers.
104. Admirable things as touching fire and water ioyntly together: also of Maltha.
105. Of Naphtha.
106. Of certaine places that burne continually.
107. Wonders of fire alone.
108. The dimension of the earth as well in length as in breadth.
109. The harmonicall circuit ond circumference of the world.

In sum, there are in this boooke of histories, notable matters, and worthy obseruations, foure hundred and eighteene in number.

Latine Authours cited.

M. Varro, Sulpitius Gallus, Tiberius Cæsar Emperour, Q. Tubero, Tullius Tiro, L. Piso, T. Livius, Cornelius Nepos, Statius Sebosus, Cæsius Antipater, Fabianus, Antias, Mutianus, Cecina, (who wrote of the Tuscane learning) *Tarquitius, L. Aquila, and Sergius Paulus.*

Forreine

Forreine Authours cited.

Plato, Hipparchus, Timæus, Sosigenes, Petosiris, Necepsus, the Pythagoreans, Posidonius, Anaximander, Epigenes, Gnomonicus, Euclides, Ceranus the Philosopher, Eudoxus, Democritus, Crisodemus, Thrasillus, Serapion, Dicearchus, Archimedes, Onesicritus, Eratosthenes, Pytheas, Herodotus, Aristotle, Ctesius, Artemidorus the Ephesian, Isidorus Characenus, and Theopompus.

¶ IN THE THIRD BOOKE ARE COMPREHENded the Regions, Nations, Seas, Townes, Hauens, Mountains, Riuers, with their measures, and people, either at this day known, or in times *past, as followeth:*

Chap.
1. Of Europe.
2. The length and breadth of Bœtica, a part of Spaine, containing Andalusia, and the realme of Grenado.
3. That hither part of Spaine called of the Romans Hispania Citerior.
4. The Prouince Nerbonencis, wherin is Dauphine, Languedoc, and Provance.
5. Italie, Tiberis, Rome, and Campaine.
6. The Island Corsica.
7. Sardinia.
8. Sicilie.
9. Lipara.
10. Of Locri and the frontiers of Italie.
11. The second gulfe of Europe.
12. The fourth region of Italie.

Chap.
13. The fifth region.
14. The sixth region.
15. The eighth region.
16. Of the riuer Po.
17. Of Italie beyond the Po, counted the eleuenth region.
18. Venice, the tenth region.
19. Of Istria.
20. Of the Alps, and the nations there inhabiting.
21. Illyricum.
22. Liournia.
23. Macedonie.
24. Noricum.
25. Pannonie, and Dalmatia.
26. Mœsia.

In this book are described 26 Islands within the Adriatick and Ionian seas: their principall cities, townes and nations. Also the chiefe and famous riuers: the highest hills: speciall Islands besides: townes and countries that be perished. In summe, here are comprised notable things, histories, matters memorable, and obseruations to the number of 326.

Latine Writers brought in for testimonie.

Turannius Gracula, Cor. Nepos, T. Livius, Cato Censorius, M. Agrippa, M. Varro, Divus Augustus the Emperour, Varro Attacinus, Antias, Hyginus, L. Vetus, Mela Pomponius, Curio the father, Cælius Aruntius, Sebosus, Licinius Mutianus, Fabricius Thuscus, L. Atteius Capito, Verrius Flaccus, L. Piso, C. Ælianus, and Valerianus.

Forreine Authours.

Artimidorus, Alexander Polyhistor, Thucidides, Theophrastus, Isidorus, Theopompus, Metrodorus, Scepsius, Callicrates, Xenophon, Lampsacenus, Diodorus Syracusanus, Nymphodorus, Calliphanes, and Timagenes.

¶ IN THE FOVRTH BOOKE ARE COMPRISED Regions, Nations, Seas, Townes, Hills, Hauens, Riuers, with theis dimensions *and people, either now or in times past knowne: viz.*

Chap.
1. Epirus.
2. Ætolia.
3. Locri.

Chap.
4. Peloponnesus.
5. Achaia.
6. Arcadia.

7. Greece,

The first Booke of

Chap.
7. Greece and Attica.
8. Theſſalie.
9. Magneſia.
10. Macedonia.
11. Thracia.
12. The Iſlands lying between thoſe countries: among which, Creta, Euboœa, the Cyclads, Sporades: alſo the Iſles within Helleſpont neare the ſea Pontus, within Mœotis, Dacia, Sarmatia, and Scythia.
13. The Iſlands of Pontus, called Mer Major.
14. The Iſlands of Germanie.
15. Iſlands in the French Ocean.
16. Britaine and Ireland.
17. Gaule or France.
18. Of Galia Lugdunenſis.
19. Of Aquitaine.
20. Of high Spaine, named Citerior.
21. Of Portugall.
22. Iſlands in the Ocean.
23. The dimenſion and meaſure of all Europe.

Herein are contained many principall townes and countries, famous riuers; Iſlands alſo, beſides cities or nations that be periſhed: in ſum, diuerſe things, hiſtories, and obſeruations.

Latine Authours cited.

M. Varr, Cato Cenſorius, M. Agrippa, Divus Auguſtus, Varro Attacinus, Cor. Nepos, Hyginus, L. Vetus, Pomponius Mela, Licinius Mutianus, Fabricius Thuſcus, Atteius Capito, and Atteius Philologus.

Of forreine Writers.

Polybius, Hecataeus, Hellanicus, Damaſtes, Eudoxus, Dicaearchus, Timoſthenes, Ephorus, Crater, Grammaticus, Serapion of Antioch, Callimachus, Artemidorus, Apollodorus, Agathocles, Eumachus Siculus the Muſitian, Alexander Polyhiſtor, Thucydides, Dociades, Anaximander, Philiſtides, Mallotes, Dionyſius, Ariſtides, Callidemus, Menaechmus, Aedaſthenes, Anticlides, Heraclides, Philemon, Menephon, Pythias, Iſodorus, Philonides, Xenagoras, Aſtyonomus, Staphilus, Ariſtocritus, Metrodorus, Cleobulus, and Poſidonius.

IN THE FIFTH BOOKE ARE CONTAINED

Regions, Nations, Seas, Townes, Hills, Riuers, with their meaſures, and people, either at this day being, or in times *paſt: that is to ſay,*

Chap.
1. Maurtania.
2. The Prouince Tingitana.
3. Numidia.
4. Affricke.
5. Cyrene.
6. Lybia Marœotis.
7. Iſlands lying about Affrick, & ouer-againſt Affricke.
8. The Æthiopians.
9. Aſia.
10. Alexandria.
11. Arabia.
12. Syria, Palæſtina, Phœnice.
13. Idumæa, Syria, Palæſtina, Samaria.
14. Iudæa, Galilea.
15. Iordan the riuer.
16. The lake Aſphaltites.
17. The Eſſenes.
18. The countrey Decapolis.
19. Tyrus and Sidon.
20. The mount Libanus.
21. Syria Antiochena.
22. The mountaine Caſius.
23. Cœle-Syria.
24. The riuer Euphrates.
25. The region Palmyra.
26. Hierapolis the countrey.
27. Cilicia and the nations adioyning: Pamphilia, Iſauria, Homonades, Piſidia, Lycaonia, the mountaine Taurus and Lycia.
28. The riuer Indus.
29. Laodicea, Apamia, Ionia, and Epheſus.
30. Æolis, Troas Pergamus.
31. Iſlands affront Aſia, the Pamphilian Sea, Rhodus, Samus, and Chius.
32. Helleſpont, Myſia, Phrygia, Galatia, Nicea, Bithynia, Boſphorus.

Herein

Plinies Naturall Hiſtory.

Herein you find townes and nations, Principall Riuers, Famous Hils, Iſlands, 117 Townes. Alſo that are loſt and periſhed. In ſumme, many things, hiſtories and obſeruations memorable.

Latine Authors alledged.

Agrippa, Suetonius Paulinus, Varro Atacinus, Cornelius Nepos, Hyginus, L. Vetus, Mela, Domitius Corbulo, Licinius Mutianus, Claudius Caeſar, Aruntius, Livius the ſon, *Seboſus*, the Acts and Records of the Triumphs.

Forreine Writers.

King *Iuba, Hecataeus, Hellanicus, Damaſtes, Dicaearchus, Bion, Timoſthenes, Philonides, Xenagoras, Aſtyonomus, Staphilus, Ariſtotle, Dionyſius Ariſtocritus, Ephorus, Eratoſthenes, Hipparchus, Panaetius, Serapion Antiochenus, Callimachus, Agathocles, Polybius, Timaeus the Mathematician, Herodotus, Myrſilus, Alexander Polyhiſtor, Metrodorus, Poſidonius who wrate Periplus or Periegeſis, Sotades, Periander, Ariſtarchus Sicyonius, Eudoxus, Antigenes, Callicratus, Xenophon Lampſacenus, Diodorus Syracuſanus, Hanno, Himilco, Nymphodorus, Calliphon, Artemidorus, Megaſthenes, Iſidorus, Celobulus, Ariſtocreon.*

IN THE SIXTH BOOKE ARE CONTAINED

Regions, Nations, Seas, Cities, Hauens, Riuers, with their dimenſions, *people alſo that be or haue been, to wit:*

Chap.
1. The ſea called Pontus Euxinus, beforetime Axenus.
2. The nations of the Paphlagones and Cappadocians.
3. Cappadocia.
4. The nations of the countrey Themiſcyra.
5. The Region Colchica. The Achæi, and the reſt in that tract.
6. Boſphorus Cimmerius, and Mœotis.
7. The people about Mœotis.
8. The Armeniæ both.
9. Armenia the greater.
10. Albania, Iberia.
11. The Scluſes and gates Caucaſiæ.
12. Iſlands in Pontus.
13. Nations about the Scythian Ocean.
14. Media and the gates or ſtreights Caſpiæ.
15. Nations about the Hircane ſea.
16. Alſo other nations confining vpon that Countrey.
17. People of Scythia.
18. The riuer Ganges.
19. The nations of India.
20. The riuer Indus.
21. The Arians and the nations bordering vpon them.
22. The Iſland Taprobane.
23. Capiſſene, Carmænia.
24. The Perſian and Arabian gulfes.
25. The Iſland Caſſandrus, and kingdomes of the Parthians.
26. Media, Meſopotamia, Babylon, Seleucia.
27. The riuer Tigris.
28. Arabia Nomades, Nabathæi, Omani, Tylos and Ogyris two Iſlands.
29. The gulfes of the red ſea, the Troglodite and Æthyopian ſeas.
30. Diuerſe nations of ſtrange and wonderfull ſhapes.
31. Iſlands of the Æthyopian ſea.
32. Of the fortunat Iſlands.
33. The diuiſion of the earth calculated by meaſures.
34. A diuiſion of the earth by climates, lines parallele, and equall ſhadowes.

Townes of name. 195. Nations of account. 566. Famous riuers. 180. Notablehils. 38. Principall Iſlands. 108. Cities and Nations periſhed. 195. In ſumme, there are rehearſed in this booke of other things, hiſtories and obſeruations. 2214.

Latine Authors alleadged.

M. Agrippa, Varro Atacinus, Cornelius Nepos, Hyginus, Lu. Vetus, Mela Pomponius, Domitius Corbulo, Licinius Mutianus, Claudius Caeſar, Aruntius Seboſus, Fabricius Thuſcus, T. Livius, Seneca, Nigidius.

Forreine

Forreine writers.

King *Iuba*, *Polybius*, *Hecataeus*, *Hellanicus*, *Damastes*, *Eudoxus*, *Dicaearchus*, *Beto*, *Timosthenes*, *Patrocles*, *Demodamas*, *Clitarchus*, *Eratosthenes*, *Alexander Magnus*, *Ephorus*, *Hipparchus*, *Panætius*, *Callimachus*, *Artemidorus*, *Apollodorus*, *Agathocles*, *Polybius*, *Eumachus Siculus*, *Alexander Polyhistor*, *Amometus*, *Metrodorus*, *Posidonius*, *Onesicritus*, *Nearchus*, *Megasthenes*, *Diognetus*, *Aristocreon*, *Bion*, *Dialdon*, *Simonides* the younger, *Basiles*, and *Xenophon Lampsacenus*.

¶ IN THE SEVENTH BOOKE ARE CONTAINED the wonderfull shapes of men in *diuerse countries*.

Chap.
1. The strange formes of many nations.
2. Of the Scythians, and other people of diuerse countries.
3. Of monstrous and prodigious births.
4. The transmutation of one sex into another. Also of twins.
5. Of the generation of man. The time of a womans child-bearing, from seuen moneths to eleuen, proued by notable examples out of histories.
6. Of conceptions, and children within the wombe. The signes how to know whether a woman goe with a sonne or a daughter, before she is deliuered.
7. Of the conception and generation of man.
8. Of Agrippæ, *i.* those who are borne with the feet forward.
9. Of strange births, namely, by meanes of incision, when children are cut out of their mothers wombe.
10. Of Vopisci, *i.* such as being twins were borne aliue, notwithstanding the one of them was dead before.
11. Histories of many children borne at one burden.
12. Examples of those that were like one to another.
13. The cause and manner of generation.
14. More of the same matter and argument.
15. Of womens monethly tearmes.
16. The manner of sundry births.
17. The proportion of the parts of mans body and notable things therein obserued.
18. Examples of extraordinary shapes.
19. Strange natures of men.
20. Of bodily strength and swiftnesse.
21. Of excellent sight.
22. Who excelled in hearing.
23. Examples of patience.
24. Who were singular for good memorie.
25. The praise of *C. Iulius Cæsar*.

Chap.
26. The commendation of *Pompey* the Great.
27. The praise of *Cato*, the first of that name.
28. Of valour and fortitude.
29. Of notable wits, or the praises of some for their singular wit.
30. Of *Plato*, *Ennius*, *Virgill*, *M. Varro*, and *M. Cicero*.
31. Of such as carried a maiestie in their behauiour.
32. Of men of great authority and reputation.
33. Of certaine diuine and heauenly persons.
34. Of *Scipio Nasica*.
35. Of Chastitie.
36. Of Pietie, and naturall kindnesse.
37. Of excellent men in diuerse sciences, and namely, in Astrologie, Grammer, and Geometrie, &c.
38. *Item*, Rare peeces of worke made by sundry artificers.
39. Of seruants and slaues.
40. The excellencie of diuerse nations.
41. Of perfect contentment and felicitie.
42. Examples of the varietie and mutabilitie of fortune.
43. Of those that were twice outlawed and banished: of *L. Sylla* and *Q. Metellus*.
44. Of another *Metellus*.
45. Of the Emperour *Augustus*.
46. Of men deemed most happy aboue all others by the Oracles of the gods.
47. Who was canonized a god whiles hee liued vpon the earth.
48. Of those that liued longer than others.
49. Of diuerse natiuities of men.
50. Many examples of strange accidents in maladies.
51. Of the signes of death.
52. Of those that reuiued when they were carried forth to be buried.
53. Of suddaine death.
54. Of sepulchres and burials.

55. Of

Chap.
55. Of the soule: of ghosts and spirits.
56. The first inuentors of many things.
57. Wherein all nations first agreed.
58. Of antique letters.
59. The beginning of Barbers first at Rome.
60. The first deuisers of Dials and Clockes.

In summe, there be in this booke of stories strange accidents and matters memorable 747.

Latine Authors alleadged.

Varrius, *Flaccus*, *Cn. Gellius*, *Licinius Mutianus*, *Mutius*, *Massurius*, *Agrippina* wife of *Claudius*, *M. Cicero*, *Asinius Pollio*, *Messala*, *Rufus*, *Cornelius Nepos*, *Virgil*, *Liuie*, *Cordus*, *Melissus*, *Sebosus*, *Cornelius Celsus*, *Maximus Valerius*, *Trogus*, *Nigidius Figulus*, *Pomponius Atticus*, *Pedianus*, *Asconius*, *Sabinus*, *Cato Censorius*, *Fabius Vestalis*.

Forreine Writers.

Herodotus, *Aristeus*, *Beto*, *Isigonus*, *Crates*, *Agatharcides*, *Calliphanes*, *Aristotle*, *Nymphodorus*, *Apollonides*, *Philarchus*, *Damon*, *Megasthenes*, *Ctesias*, *Tauron*, *Eudoxus*, *Onesicratus*, *Clitarchus*, *Duris*, *Artemidorus*, *Hippocrates the Physitian*, *Asclepiander the Physitian*, *Hesiodus*, *Anacreon*, *Theopompus*, *Hellanicus*, *Damasthes*, *Ephorus*, *Epigenes*, *Berosus*, *Pesiris*, *Neccepsus*, *Alexander Polyhistor*, *Xenophon*, *Callimachus*, *Democritus*, *Duillius*, *Polyhistor the Historian*, *Strato*, who wrate against the *Propositions*, and *Theoremes of Ephorus*, *Heraclides Ponticus*, *Asclepiades who wrate Tragodamena*, *Philostephanus*, *Hegesias*, *Archimachus*, *Thucidides*, *Menesgiton*, *Xenagoras*, *Metrodorus Scepsius*, *Anticlides*, and *Critodemus*.

¶ IN THE EIGHT BOOKE ARE CONTAINED the natures of land beasts *that goe on foot*.

Chap.
1. Of land creatures: The good and commendable parts in Elephants: their capacitie and vnderstanding.
2. When Elephants were first yoked and put to draw.
3. The docilitie of Elephants, and their aptnesse to learne.
4. The clemency of Elephants: that they know their owne dangers. Also of the felnesse of the Tigre.
5. The perceiuance and memory of Elephants.
6. When Elephants were first seene in Italie.
7. The combats performed by Elephants.
8. The manner of taking Elephants.
9. The manner how Elephants be tamed.
10. How long an Elephant goeth with young: and of their nature.
11. The countries were Elephants breed: the discord and warre betweene Elephants and Dragons.
12. The industrie and subtill wit of Dragons and Elephants.
13. Of Dragons.
14. Serpents of prodigious bignesse: of Serpents named Boæ.
15. Of beasts engendred in Scythia, and the North countries.
16. Of Lions.
17. Of Panthers.
18. The nature of the Tygre: of Camels and the Pard-Cammell: when it was first seene at Rome.
19. Of the Stag-Wolfe named Chaus: and the Cephus.
20. Of Rhinoceros.
21. Of Onces, Marmosets called Sphinges, of the Crocutes, of common Marmosets, of Indian Bœufes, of Leucrocutes, of Eale, of the Æthiopian Bulls, of the best Manticora, of the Sicorne or Vnicorne, of the Catoblepa, and the Basiliske.
22. Of Wolues.
23. Of Serpents.
24. Of the rat of India called Ichneumon.
25. Of the Crocodiles and Skinke, and the Riuer-horse.
26. Who shewed first at Rome the Water-horse and the Crocodiles. Diuerse reasons in Physicke found out by dumb creatures.
27. Of beasts and other such creatures which haue taught vs certaine hearbes, to wit, the red Deere, Lizards, Swallowes, Tortoises,

the

Chap.
the Weasell, the Stork, the Bore, the Snake, the Panther, the Elephant, Beares, Stocke-Doues, House-Doues, Cranes, and Rauens.
28. Prognostications of things to come, taken from beasts.
29. What cities and nations haue bin destroied by small creatures.
30. Of the Hiæna, the Crocuta and Mantichora: of Bieuers and Otters.
31. Of Frogs, sea or sea-Calues, and Stellions.
32. Of Deere both red and Fallow.
33. Of the Tragelaphis: of the Chamæleon, and other beasts that change colour.
34. Of the Tarand, the Lycaon, and the Wolfe called Thoes.
35. Of the Porc-espines.
36. Of Beares, and how they bring forth their whelpes.
37. The rats and mice of Pontus, and the Alps: also of Hedgehogs.
38. Of the Leontophones, the Onces, Graies, Badgers and Squirrils.
39. Of Vipers, Snailes in shels, and Lizards.
40. Of Dogs.
41. Against the biting of a mad dog.
42. The nature of Horses.
43. Of Asses.
44. Of Mules.
45. Of Kine, Buls, and Oxen.
46. Of the Bœufe named Apis.
47. The nature of sheepe, their breeding and generation.
48. Sundry kinds of wooll and cloths.
49. Of sheepe called Musmones.
50. Of Goats and their generation.
51. Of Swine and their nature.
52. Of Parkes and Warrens for beasts.
53. Of beasts halfe tame and wild.
54. Of Apes and Monkies.
55. Of Hares and Connies.
56. Of beasts halfe sauage.
57. Of Rats and Mice: of Dormice.
58. Of beasts that liue not in some places.
59. Of beasts hurtfull to strangers.

In summe, there be in this Booke principall matters, stories, and obseruations worth the remembrance 788.

Latine Authors alledged.

Mutianus, Procilius, Verrius Flaccus, L. Piso, Cornelius Valerianus, Cato Censorius, Fenestella, Trogus, Actius, Columella, Virgil, Varro, Lu. Metellus Scipio, Cornelius Celsus, Nigidius, Trebius Niger, Pomponius Mela, Manlius Sura.

Forreine writers.

King *Iuba, Polybius, Onesicritus, Isidorus, Antipater, Aristotle, Demetrius* the naturall Philosopher, *Democritus, Theophrastus, Euanthes, Agrippa* who wrote of the *Olympionicæ, Hsero*, King *Attalus*, King *Philometer, Ctesias, Duris, Philistus, Architus, Philarchus, Amphilocus* the Athenian, *Anaxipolis* the Thasian, *Apollodorus* of Lemnos, *Aristophanes* the Milesian, *Antigonus*, the Cymæan, *Agathocless* of Chyos, *Apollonicus* of Pergamus, *Aristander* of Athens, *Bacchus* the Milesian, *Bion* of Soli, *Chæreas* the Athenian, *Diodorus* of Pyreæum, *Dio* the Colophonian, *Epigenes* of Rhodes, *Evagon* of Thassus, *Euphranius*, the Athenian, *Hegesias*, of Maronea, *Menander* of Pyreæum, *Menander* also of Heraclea, *Menecrates* the Poet, *Androcian* who wrote of Agriculture or Husbandry, *Æschrion* who likewise wrote of that argument, *Dionysius* who translated *Mago, Diophanes* who collected an Epitome or Breuiarie out of *Dionisius*, King *Archelaus*, and *Nicander*.

¶ IN THE NINTH BOOKE ARE CONTAINED the Stories and Natures of Fishes *and water-creatures.*

Chap.
1. The nature of water-creatures.
2. The reason why the creatures of the sea are of all other biggest.
3. The monstrous beasts of the Indian sea.
4. The greatest fishes and beasts in euerie part of the Ocean.
5. Of Tritones, Nereides, and sea Elephants: their shapes and formes.

6. Of

Chap.
6. Of great Whales, called Balænæ and Orcæ.
7. Whether fishes doe take and deliuer their breath? whether they sleepe or no?
8. Of Dolphins and their wonderfull properties.
9. Of the Tursiones.
10. Of the sea Tortoises, and how they bee taken.
11. Who first deuised to sliue the Tortoise shels into leaues.
12. The skins and shels of the sea creatures: the diuision of them into their seuerall kinds.
13. Of the Seale or sea-Calfe.
14. Of fishes smooth and without haire: how they spawn and breed: and how many sorts there be of them.
15. The names and natures of many fishes.
16. The presages by fishes, and their variety.
17. Of the Muller and other fishes. That the same fishes are not in request in all places.
18. Of the Barble, the sea Rauen Coracinus: of Stock fish and Salmon.
19. Of the Exœcetus, Calamaries, Lampreies, &c.
20. The diuision of fishes by the shapes of their bodies.
21. Of Eeles.
22. The manner of taking them in the lake Benacus.
23. The nature of the Lamprey.
24. Of flat and broad fishes.
25. Of the stay-ship Echeneis, and his wonderfull nature.
26. The changeable nature of fishes.
27. Of the fish called the Lanterne, and the sea Dragon.
28. Of fishes wanting bloud.
29. Of the Pourcuttle, the Cuttle fish, the Calamarie, and the fish called the Sayler or Mariner.
30. The fish Ozæna, and Nauplius: also of Lobsters.
31. Of Crabs, Sea Porkespines: and of the greater sort named Echinometræ.
32. Of Wilkes, Cockles, and shell fishes.
33. Of Scallops, Porcellanes, of the shell fish Murex, and other such.
34. The riches and treasures of the sea.
35. Of Pearles, how they be engendred, and where: also how they be found.
36. The nature of the Purple fish and the Burrets or Murices.
37. How many kinds there be of purple fishes.
38. How the purple fishes be taken.
39. When purple was first worne in the city of Rome.
40. The price of purple clothes at Rome.
41. The dying of the Amethyst colour, of the Skarlet in grain, and the light Skarlet Hysginus.
42. Of the fish called the Nacre, and his guide or keeper Pinnoteres: also the intelligence of fishes and water creatures.
43. Of Scolopendres, sea Foxes, and the fishes Glani.
44. Of the fish called the sea Ram.
45. Of those things which haue a third nature, beeing neither liuing creatures, ne yet plants, to wit, of sea Nettles and Spunges.
46. Of Hound fishes or sea dogs.
47. Of sea fishes that haue stony shels: of those that haue no sence at all: of other nastie and filthie creatures.
48. Of sea fishes venomous.
49. The diseases incident to fishes.
50. The admirall generation of Fishes.
51. *Item*, Another discourse of their generation: and what fishes they bee which doe lay egges.
52. The matrices or wombes of fishes.
53. What fishes liue longest.
54. Of Oyster pits, and who did first deuise them.
55. Who first inuented stewes and ponds to feed Lampreies in.
56. The stewes and ponds for other shell Fishes, and who brought them vp first to be vsed.
57. Of fishes that haunt the land.
58. The rats of Nilus.
59. Of the fish called Anthias, and how hee is taken.
60. Of the sea starres.
61. Of the fishes Dactyli, and their admirable properties.
62. What fishes do entertain amitie one with another, and which be euer at warre.

In summe, this Booke containeth stories, notable things, and obseruations, to the number of 650, collected

Our of

Out of Latine Authors.

Turanius Gracula, Trogus, Mecænas, Alfius Flauus, Cornelius Nepos, Laberius, the writer of merry Epigrams, *Fabianus, Fenestella, Mutianus, Ælius Stilo, Statius Sebosus, Melissus, Seneca, Cicero, Macer Æmylius, Messana Corvinus, Trebius Niger*, and *Nigidius*.

Out of Forreine Writers.

Aristotle, king *Archelaus, Callimachus, Democritus, Theophrastus, Thrasyllus, Hegesidemus*, of Cythnos, and *Alexander Polyhistor*.

¶ IN THE TENTH BOOKE ARE CONTAI-ned the natures and stories of Foules and *flying creatures*.

Chap.

1. The nature of Foules.
2. Of the Phœnix.
3. Of Ægles.
4. When the Romane legions vsed the Ægle standard, and other ensignes. Also with what creatures Ægles maintaine fight.
5. A strange and wonderfull case as touching an Ægle.
6. Of the Vultures or Geires.
7. Of the foule Sangualis.
8. Of Faulcons and Hawkes.
9. Of the Cuckow, which is killed by birds of her owne kind.
10. Of Kites or Puttockes.
11. A diuision of birds into generall kinds.
12. Of vnluckie and ominous birds, the Crow, the Rauen, and the Like-owle.
13. Of the foule that carieth fire in her mouth.
14. Of the bird Clivina.
15. Of many birds vnknowne.
16. Of foules that flie by night.
17. Of Howlets.
18. Of the Wood-pecker.
19. Of birds which haue clawes and crooked tallons.
20. Of Peacockes: and who killed them first for to be serued at the table.
21. Of Cockes: how they be cut: of a dunghill cocke that spake.
22. Of Geese: who first deuised to make a daintie dish of the Goose liuer: the grauie or fat of Geese, called Comagenum.
23. Of Cranes, Storkes, Swans, strange foules of outlandish countries, of Quailes, and the bird Glotis.
24. Of Swallowes and Martins, of Blackbirds, Thrushes and Merles, of Sterlings, Turtle-doues, and Quoists or Ring-doues.
25. Of birds that tarie with vs all the yere long

Chap.

of birds that be for halfe a yeare onely, and others that remaine but three moneths.

26. Maruellous stories of birds.
27. Of birds called Seleucides.
28. Of the foule Ibis.
29. What birds will not abide in all places: which they be that change both hew and voice: also of Nightingales.
30. Of Merles or Ousels.
31. The time wherein birds breed, lay, and sit.
32. Of the birds Halciones, the nauigable daies that they doe shew: of the Sea-guls and Cormorants.
33. The industry and subtilty of birds in building their neasts: of the ordinary Swallow, the riuer Swallow Argatilis: the bird Cinnamologie that steale Cinnamon, and of Partridges.
34. Of House-doues.
35. Of Stock-doues.
36. Of Sparrowes.
37. Of the Kestrell or Stannell.
38. Of the flight and gate of birds.
39. Of certaine footlesse Martinets, called Apodes.
40. Of certain Guls that milk and suck Goats vdders, and be named Caprimulgi: also of Pelicanes named Plateæ.
41. The perceiuance and naturall wit of birds.
42. Of the Linnet, Popinjay, or Parret, and such birds that will learne to speake.
43. The intelligence and vnderstanding that Rauens haue.
44. Of *Diomedes* his birds.
45. Of dull witted birds that will be taught nothing.
46. The manner how birds drinke.
47. Of foules called Himantipodes, and Onacrotali, and of other such strange birds.
48. The

Chap.

48. The names of many birds, & their natures.
49. Of strange and new birds, such also as bee holden for fabulous.
50. Who deuised first to cram hens & capons, of bartons, mewes, and coupes to keepe and feed foules: and the first inuentor thereof.
51. Of *Æsopes* platter.
52. The generation of birds, and what fourfooted beasts do lay eggs as well as birds.
53. The knitting of eggs within the body, the laying, couving and sitting of them, the maner and time of birds engendring.
54. The accidents that befall to broodie birds whiles they sit, and the remedies thereof.
55. Auguries and presages by egges.
56. What Hens be of the best kind.
57. The diseases incident to Hens & the cure.
58. The maner how birds conceiue: what number of egs they lay, & how many they hatch
59. Of Peacockes and Geese.
60. Of Herons and Bitters. The way to preserue and keepe egges.
61. The only bird that bringeth forth her yong aliue, & feeds the same at the pap with milk

Chap.

62. The conception of the Viper, and how she is deliuered of her young, also what land creatures lay egges.
63. The ordinary generation of land creatures.
64. The diuersitie of liuing creatures in the maner of their engendring.
65. The yong ones that mice and rats do breed
66. Whether of the marrow of a mans backe bone a serpent will engender.
67. Of the Salamander.
68. What things bee engendred of those that were never engendred, and contrariwise, what creatures they be, which being engendered themselues, breed not.
69. The sences of liuing creatures.
70. That fishes doe both heare and smell.
71. That the sence of feeling is common to all liuing creatures.
72. What creatures liue of poysons, and eat earth.
73. Of the meat and drink of diuers creatures.
74. What creatures euermore disagree: and which they be that agree well together.
75. Of the sleepe of liuing creatures.

This booke hath in it of notable matters, histories and obseruations 904, gathered out of

Latine Authors and records.

Manilius, Cornelius Valerianus, the publike records and registers, *Vmbritius* surnamed *Melior, Massurius Sabinus, Antistius Labeo, Trogus Cremutius, M. Varro, Macer Æmilius, Melisses, Mutianus, Nepos, Fabius Pictor, T. Lucretius, Cornelius Celsus, Horatius, Desulo, Hyginus, Sarsennæ*, both father and sonne, *Nigidius* and *Manlius Sura*.

Forreine Writers.

Homer, Phœmonoes, Philemon, Boethius who wrote a treatise called Ornithagonia, *Hylas* who made a discourse of Auguries, *Aristotle, Theophrastus, Callimachus, Æschylus, Hicro, Philometor, Archytas, Amphilochus* the Athenian, *Anaxipolis* the Thasian, *Apollodorus* of Lemnos, *Aristophanes* the Milesian, *Antigonus* the Cymæan, *Agathocles* of Chios, *Apollonius* of Pergamus, *Aristander* the Athenian, *Bacchius* the Milesian, *Bion* of Soli, *Chæreas* the Athenian, *Diodorus* of Pryæne, *Dion* the Colophonian, *Democritus, Diophanes* of Nicæa, *Epigenes* of Rhodes, *Evagoras* of Thasos, *Euphonius* of Athens, king *Iuba, Androcion* who wrote of Husbandrie, and *Æserion* likewise who wrote thereof, *Dionysius* who translated *Mago*, and *Diophanes*, who reduced his worke into an Epitome, *Nicander, Onesicritus, Philarchus*, and *Hesiodus*.

¶ IN THE ELEVENTH BOOKE ARE CONTAI-ned the stories and natures of small creatures and such as *creepe on the ground*.

Chap.

1. Of Insects in generall.
2. The naturall industrie of those Insects.
3. Whether Insects doe breath, and whether they haue bloudor no.

Chap.

4. The matter & substance of the Insects body.
5. Of Bees.
6. The government and order which Bees keep by instinct of Nature.

Chap.

7. Diuers operations of the Bees, & the tearms thereto belonging.
8. Of what floures Bees do make their cellars, combes, and other workes.
9. What persons tooke a great loue to Bees, and delighted to nourish them.
10. The manner of Bees when they be at their businesse.
11. Of Drones.
12. The nature of Honey.
13. Which is the best Honey.
14. The seuerall and particular kinds of Hony in diuerse places.
15. The markes and tokens of good Honey.
16. Of a third kind of Honey, and how a man should know good Bees.
17. The regiment and policie that Bees obserue.
18. Diuerse sorts of Bees, and what things be hurtfull to Bees.
19. The diseases incident to Bees.
20. How to keepe the cast of Bees when they swarme, that they flie not away, also how to recouer Bees, in case their breed and race be lost.
21. Of Wespes and Hornets.
22. Of silke flies, their wormes and Iackes called Bombylis and Necydalus, and who first deuised silke-cloth.
23. Of the silke-worme in the Iland Choos.
24. Of the Spiders and their generation.
25. Of Scorpions.
26. Of Stellions and Grashoppers.
27. In what countries there bee no Grashoppers, and where they sing not.
28. The wings of Insects, of Beetles and their kinds.
29. Of Locusts.
30. Of Ants or Pismires in Italie.
31. Of Indian Ants or Emmets.
32. The diuerse sorts of Insects.
33. Of certaine creatures breeding of wood, and liuing of wood.

Chap.

34. Of a certain creature that hath no passage to void excrements.
35. Of Moths and Gnats.
36. Of flies liuing in the fire, named Pyrales or Pyraustæ.
37. A discourse Anatomicall of all parts and members of the bodie.
38. Of Bloud, also in what creatures bloud wil sooneſt clutter and congeale, and whose wil not at all. What creatures haue the grosseſt and heauieſt bloud, and which the fineſt and thinneſt: and lastly who haue no bloud at all.
39. Whether the soueraignetie, and excellencie of sence consisteth in bloud. Of the skin and hide, of the haires and dugs of liuing creatures.
40. What creatures haue notable dugs or teats aboue the rest.
41. Of Milke, and what milke will make no cheese.
42. Diuerse kinds of Cheese.
43. How the limbs and members of mans body differeth from other creatures.
44. The resemblance that Apes haue to vs.
45. Of Nailes.
46. Of Houfes.
47. Of birds feet and their clawes.
48. Of Insects feet from two to an hundred.
49. Of Dwarfes in each kind, and the genitall parts.
50. Of Tailes.
51. Of Voices.
52. Of superfluous members of the bodie. The sayings of *Aristotle* as touching long life.
53. Of the wind & breath that liuing creatures take. What things if they be tasted be venomous and deadly. The food of man, as well for meat as drinke. What causes they be that hinder digestion.
54. How to encrease or diminish the corpulencie of the bodie, and what things with taſt onely, will allay hunger and quench thirst.

In summe, this Booke containeth notable things, stories, and obseruations, 2270.

Latine Authours cited.

M. Varro, Hyginus, Scropha, Sarcena, Celsus Cornelius, Æmilius Macer, Virgil, Columella, Iulius Aquila, who wrote of the Tuscane discipline, *Tarquilius*, who likewise wrote of the same, and *Vmbritius* that trauelled in that argument, *Cato Censorius, Domitius Calvinus, Trogus, Melissus, Fauonius, Fabianus, Mutianus, Nigidius, Manilius*, and *Opius*.

Forreine Writers.

Aristotle, Democritus, Neoptolemus, who wrote * Militurgia, *Aristomachus*, who likewise made a Treatise

* Aa touching the worke of Bees.

Treatise of the same, and *Philistus* also that did the like, *Nicander, Menecrates, Dionysius*, that translated *Mago, Empedocles, Callimachus*, K. *Attalus, Apollodorus*, who wrote of venomous beasts, *Hippocrates, Eriphilus, Eraſistratus, Asclepius, Themiso, Posidonius* the Stoicke, the two *Menanders*, one of Priene, and the other of Heraclea, *Euphronius* of Athens, *Theophrastus, Hesiodus*, and K. *Philometor*.

¶ IN THE TWELFTH BOOKE ARE CONTAINED discourses of Trees

Chap.

1. The honor done to trees, of the Plane-trees: when they were first brought into Italy, and of their nature.
2. Of the dwarfe Planes growing low, and who was the first that cut and shred trees into arbours.
3. Of strange trees, and principally of the Citron tree in Assyria.
4. Of India trees, and when Ebene was first seen at Rome.
5. Of a certaine Thorn and Fig-tree of India.
6. Of a tree named Pala: also of other Indian trees that are nameleſſe, and of those that beare wooll and cotton.
7. Of Pepper trees and Clove trees, and many others.
8. Of Macir or Sugar, and the trees growing in the region Ariana.
9. Of Bdellium, and of trees along the Persian gulfe.
10. Of trees growing in the Island within the Persian gulfe, and those that beare Cotton.
11. Of Gossampine trees, and those which serue to make cloth, and wherein consisteth the fruit of certaine trees.
12. Of Costus, Spiknard, & diuers sorts of Nard
13. Of Asarabacca, Amomum, Amonius, and Cardamomum.

Chap.

14. Of Frankincense, & trees that yeeld Incense
15. Of Myrrhe and Myrrhe trees.
16. Of sundry sorts of Myrrh, the nature thereof, and the price.
17. Of Mastick, Ladanum, and Bruta, of Enhæmum, Strobus, and Styrax.
18. Of the felicitie and happineſse of Arabia.
19. Of Cinnamon, and the wood therof called Xylocinnamum, and of Casia.
20. Of Isocinnamon or Canel, of Caucamum and Tarum.
21. Of Serichatum, Gabalium, and Ben, otherwise called Myrobalanus.
22. Of Dates called Phœnicobalanus, & sweet Calamus.
23. Of Ammoniacum, and the sweet Mosse called Sphagdus, or Vsnea.
24. Of Cyprus, Aspalathus and Marum.
25. Of Baulme, as well the liquor called Opobalsamum, as the wood Xylobalsamum, of Storax and Galbanum.
26. Of Panace, Spondylium, and Malobathrum or Folium Indicum.
27. Of the oile of green Oliues called Omphacium, and of Verjuice.
28. Of Bryon, and the wild Vine Oenanthe, of the Firre Elate, of Cinnamon, and the oyle of Nuts called Caryopus,

In summe, this booke containeth in it of notable matters, histories, and obseruations, 974.

Latine Authours alledged.

M. Varro, Mutianus, Virgil, Fabian, Sebosus, Pomponius Mela, Flavius Proculus, Trogus, Hyginus, Claudius Cæsar, Cornelius Nepos, Sextius Niger, who wrote in Greeke of Physicke, *Cassius Hemina, L. Piso, Tuditanus*, and *Antias*.

Forreine Writers.

Theophrastus, Herodotus, Callisthenes, Isidorus, Clitarchus, Anaximenes, Dioris, Nearchus, Onesicratus, Polycritus, Olympiodorus, Diognetus, Nicobulus, Anticlides, Charax of Mitylene, *Menechmus, Dorotheus, Xenias* the Athenian, *Lycus, Antæus, Ephippus, Chæreas, Democles, Ptolomæus, Lagus, Marsyas* the Macedonian, *Zoilus* likewise of Macedonie, *Democritus, Amphilocus, Aristomachus, Alexander Polyhistor*, king *Iuba, Apollodorus* the authour of the treatise concerning sweet odours, *Heraclides* the Physitian, *Archidemus* likewise the Physitian, *Dionysius, Democlides, Euphron, Obsenides, Diagoras, Iolla* (all six Physitians) *Heraclides* of Tarentum, *Xenocritus* of Ephesus, and *Eratosthenes*.

¶ IN

¶ IN THE THIRTEENTH BOOKE ARE CONTAINED Treatises of Ointments and of Trees *by the sea side.*

Chap.
1. Of sweet ointments & perfumes: when they came to bee first knowne at Rome, and of their composition.
2. What ointment was that which they called Roiall: which bee Diapasmate or drie perfumes, and how they be kept.
3. The ryotous and superfluous expences that the Romanes were at for such ointments: and when they were first taken vp and vsed in Rome.
4. Of Palmes or Date trees, their nature and sundry sorts.
5. The trees of Syria.
6. Of the Terebinth tree.
7. Of the Ægyptian Figtree or Sycomore, and that of Cypresse.
8. Of the fruit which is called Ceraunia Siliqua.
9. Of the Peach-tree or Persica of Ægypt: and the Ægyptian Thorn, wherof commeth Acacia.
10. Of the Plum tree and others about Memphis.
11. Sundry sorts of gums, and of the Papyr reed.
12. Diuers kinds of Paper, how Paper is made, the triall of good Paper, the faults of Paper, and the paste that goeth to the making of Paper.
13. The bookes of king *Numa*.
14. The tree of Æthyopia.
15. The trees of Atlas, Citron trees, what points are commendable or otherwise faultie therein.
16. Of the tree Thya.
17. Of the tree Lotus.
18. Of the body and roots of Lotus.
19. Of Patyurus, of the Pomgranat, and the floure of the Pomgranat.
20. Of plants and shrubs in Asia and Greece.
21. Of Thymelæa, Chamelæa, Tragacanthe, Tragium or Scorpio, of Tamariske, Brya, and Galla.
22. Of Euonymus or Spyndle tree, of Adrachne Congygria, and Thapsia.
23. Of Capparis or Cynosbatos, or Opheostaphyle, and of Sari.
24. Of the royall thorne of Babylon, and Cytisus or tree Trifolie.
25. Of shrubs and trees growing vpon our Mediterranean seas, the red sea and the Indian sea.

In summe, there be comprised in this book of notable things, stories, and obseruations, foure hundred fiftie and eight.

Latine Authours cited.

Marcus Varro, Mutianus, Virgil, Fabianus, Sebosus, Pomponius Mela, Flauius Proculus, Trogus, Hyginus, Clandius Cæsar, Cornelius Nepos, Sextius Niger, who wrote in Greeke of Physicke, *Cassius Hemina, L. Piso, Tuditanus*, and *Antias*.

Forreine Writers.

Theophrastus, Herodotus, Callisthenes, Isidorus, Clitarchus, Anaximenes, Duris, Nearchus, Onesicritus, Policritus, Olympiodorus, Diognetus, Cleobulus, Anticlides, Charax the Mitylenæan, *Menæchmus, Dorotheus, Xenias* the Athenian, *Lycus, Antæus, Ephippus, Dio, Adimanthus, Ptolomæus Lagus, Marsyas* and *Zoilus*, both Macedonians, *Democritus, Amphilochus, Alexander Polyhistor, Aristomachus*, king *Iuba, Apollodorus* who wrate of Odours, *Heraclides* the Physician, *Botrys, Archidemus, Dionysius, Democlides, Euphron, Menecles, Diagoras* and *Iolla* Physicians all, *Heraclides* of Tarentum, and *Xenocritus* the Ephesian.

¶ IN

¶ IN THE FOVRTEENTH BOOKE ARE contained Treatises of Vine-trees and *Vine-yards.*

Chap.
1. Of Vines and their nature, the manner how they beare grapes.
2. Sundry kinds of Vines in generall.
3. More kinds of Vines according to the propertie of countries where they grow.
4. Notable considerations as touching the planting and ordering of Vines.
5. The nature of wine.
6. The best and most kindly wines.
7. Wines outlandish and beyond sea.
8. Of the wine called Biæon, seuen kinds therof
9. Of sweet wines fourteene sorts.
10. Of second wines or houshold wines.
11. What good wines began of late to bee in request at Rome.
12. Obseruations of wine, set downe by king *Romulus*.
13. The ancient vsage of wine, and the wines of old time.
14. Of cellars for wine, and the wine Opimnianum.
15. *Cæsars* liberalitie in wine, and when first there were foure sorts of wine set downe.
16. Of artificiall or set wines.
17. Of Hydromell and Oxymell.
18. Prodigious and strange kinds of wine.
19. What wines might not be vsed in sacrifices, and with what sorts new wines are sophisticated.
20. Sundry sorts of Pitch and Rosin: of the manner of sophisticating new wines: of vinegre and wine lees.
21. Of wine cellars.
22. Of auoiding drunkennesse.

In summe, it containeth notable matters, histories and obseruations 510, gathered out of

Latine Authors.

Cornelius Valerius, Virgil, Celsus, Cato Censorius, Sarsennas both father and sonne, *Scropha, Varro, Decimus Syllanus, Fabius Pictor, Trogus Hyginus, Flaccus Verrius, Gracinus Iulius, Accius, Columella, Massurius Sabinus, Fenestella, Tergilla, M. Actius Plautus, Fabius, Dorsennus, Scævola, Ælius, Atteius Capito, Cutta Messalinus, L. Piso, Pompeius Lenæus, Fabianus, Sextius Niger*, and *Vibius Rufus*.

Forreine Authours.

Hesiodus, Theophrastus, Aristotle, Democritus, king *Attalus*, K. *Philometer, Architas, Xenophon, Amphilochus* the Athenian, *Anaxipolis* the Thasian, *Apollodorus* the Lemnian, *Aristophanes* the Milesian, *Antigonus* the Cymæan, *Agathocles* the Chian, *Apollonius* of Pergamus, *Aristander* of Athens, and likewise *Batrys* the Athenian, *Bacchius* the Milesian, *Bion* of Soli, *Chæreas* the Athenian, and *Cherisius* likewise of Athens, *Diodorus* of Priene, *Dio* the Colophonian, *Epigenes* the Rhodian, *Evagoras* the Thasian, *Euphron* of Athens, *Androcion, Æscrion* and *Lysimachus*, who wrote al three of Agriculture, *Dionysius* who translated *Mago, Diophanes* who brought *Dionysius* into an Epitome, *Asclepiades* the Physitian, *Onesicritus* and king *Iuba*.

¶ THE FIFTEENTH BOOKE TREATETH OF the nature of Trees fruitfull, and planted in *Hort-yards.*

Chap.
1. The nature of fruitfull trees.
2. Of the oyle of Olives.
3. The nature of the Olive & yong Olive trees
4. The nature of the oile Olive.
5. The manner of husbanding Olive rowes.
6. How to keepe Olives and make oile therof.
7. Of artificiall oile.
8. Of the dregs or Oliue cake, being pressed.
9. Of fruits of trees good to eat, their seuerall kinds and natures.
10. Of Pine nuts foure kinds.
11. Of the Quince.

12. Of

Chap.
12. Of Peaches foure sorts.
13. Of Plums eleuen kindes.
14. Sundry kindes of Apples, and namely, nine and twentie sorts.
15. Of Peares and Wardens: of sundrie strange deuises to graffe trees.
16. Of preseruing and keeping Apples & such like fruits.
17. The manner how to keepe Quinces, Pomgranats, Peares, Wardens, Soruises, and Grapes.
18. Of Figs nine and twentie sorts.
19. Of the wild Figtree: of caprification or the manner how to bring Figgs to maturitie by the meanes of certaine flies.
20. Of Medlars, and three sorts of them.
Chap.
21. Foure kinds of Soruoises.
22. Of the Walnut.
23. Of Chestnuts eight kinds.
24. Of Charobs called Siliquæ, of Apples, of Mulberies, of Graines, Pippins and Kernils within the fruits, also of berries.
25. Of Cherries eight sorts.
26. Of the Corneill fruit, and Lentisk.
27. Sundry sorts of juices, and odours.
28. Of the juices in fruits and trees: of colors, smells, and the natures of diuerse fruits, also the singularities and commendations of them.
29. Of the Myrtle eleuen kinds thereof.
30. Of the Lawrell or Bay-tree, thirteene sorts of it.

In summe, there be compriſed in this booke of notable matters, ſtories, and obſeruations 500, collected out of

Latine Authours.

Veneſtella, Fabianus, Virgill, Cornelius, Valerianus, Celſus, Cato Cenſorius, Sarſennæ (both father and ſonne) *Scropha, Mar. Varro, D. Syllanus, Fabius Pictor, Trogus, Hyginus, Flaccus Verrius, Gracinus, Atticus, Iulius Sabinus, Tergilla, Cotta Meſſalinus, Columella, L. Piſo, Pompeius Lenæus, M. Accius Plautius, Fabius Dorſenus, Scæuola, Ælius, Atteius Capito, Sextus Niger*, and *Vibius Ruſus*.

Forreine writers.

Heſiodus, Ariſtotle, Democritus, king *Hiero, Architas*, king *Philometor*, king *Attalus, Xenophon, Amphilochus* the Athenian, *Anaxipolis* the Thaſian, *Apollodorus* of Lemnos, *Ariſtophanes* the Mileſian, *Antigonus* the Cymæan, *Agathocles* of Chios, *Apollodorus* of Pergamus, *Ariſtander* the Athenian, *Bacchus* the Mileſian, *Bion* of Soli, *Chæreas* of Athens, and *Chariſtus* likewiſe the Athenian, *Diodorus* of Priene, *Dion* the Colophonian, *Epigenes* the Rhodian, *Evagoras* the Thaſian, *Euphronius*, the Athenian, *Androcion* and *Æſchrion* (who writ both of Husbandry) *Dionyſius*, that tranſlated the books of *Mago*, and *Dionyſius* the Epitomiſt, who brought them all into a Breuiarie. *Aſclepiades* and *Eraſiſtratus*, both Phyſitians, *Comiades*, who writ as touching the confections of wine, *Ariſtomachus, Hiceſius*, who both treated of the ſame matter, *Themiſon* the Phyſition, *Oneſicritus*, and king *Iuba*.

¶ IN THE SIXTEENTH BOOKE ARE CONtained the natures of wild trees.

Chap.
1. Countries wherein no trees doe grow: miraculous wonders of trees in the North countries.
2. Of the great forreſt Hircynia.
3. Trees that beare maſt.
4. Of the Ciuick guirland, and who in old time were adorned and honoured with chaplets of tree leaues.
5. Of Maſt thirteene kinds.
6. Of Beech Maſt, and other ſorts of Maſt: of Coale, and the feeding of Hogs.
7. Of Gals, and how many things beſides Maſt and Acornes Maſt trees do beare.
8. Of Cachrys, and of the Skarlet graine: alſo of Agaricke and Corke.
9. Of what trees the barke is in vſage.
10. Of ſhindles to couer houſes, of the Pine-tree and the wild Pine, of the Fir & Pitch-tree, of the Larch-tree, of the Torch-tree Tœda, and the Eugh-tree.

11. The

Chap.
11. The manner of making ſundrie ſorts of Pitch and Tar: how the virgin pitch called Cedrium is made: of the thicke ſtone pitch how it is made: and the waies to boile roſin.
12. Of the ſhip pitch called Zopiſſa: of Sapium: and thoſe trees that yeeld timber good for building.
13. Of the Aſh tree, foure kinds.
14. Of the Teil or Linden tree, two ſeuerall ſorts thereof.
15. Ten diuerſe ſorts of Maples.
16. Of the knot in Maple called Bruſcus and Molluſcum: of a kind of Fiſticke tree called Staphylodendron: of Box tree three ſorts.
17. Of the Elme, foure kinds.
18. The nature of trees according to their ſcituation and places where they grow.
19. A generall diuiſion of trees.
20. What trees neuer ſhed their leaues quite: of the Oleander tree called Rhododendron.
21. Againe what trees loſe not their leaues, but ſhew alwaies greene, which be they that ſhed their leaues in part. In what countries no trees at all doe loſe their leaues.
22. The nature of thoſe trees which let fall their leaues, and which haue leaues of ſundry colours.
23. Three ſorts of Aſps or Poplers: & of what trees the leaues do alter their forme and faſhion.
24. What leaues vſe to turne euerie yeere: the manner how to order the leaues of Date trees and to vſe them. Alſo ſtrange and admirable things as touching leaues.
25. The order and courſe that Nature holdeth in plants: the bloſſomes of trees: their manner of conception, blouming, budding, and bearing fruit: and in what order they put out floures.
26. Of the Corneil tree: the right ſeaſon wherein euerie tree beareth fruit: what trees bee fruitleſſe, and therefore are ſuppoſed vnhappie: which they bee that ſoone loſe their fruit: and laſt of all what trees ſhew fruit before they be put forth.
Chap.
27. Of trees that beare fruit twice and thrice in one yeere: what trees ſodainely wax old: the age of trees.
28. Of the Mulberrie tree.
29. Of trees growing wild.
30. Of the Box tree, and the great Beane tree or Lotus.
31. Of the boughs, branches, barke, rinde, and root of trees.
32. Of prodigious trees that preſage ſomewhat to come: of trees that ſpring and grow of themſelues. Alſo a diſcourſe, that all trees grow not in euery place: and what trees will not liue but in this or that one place.
33. Of the Cyprus tree. Alſo, that the ground will bring forth ſome new plants that neuer were ſet, ſowne, or growing there before.
34. Of Yvie.
35. Of the Ivie called Smilax.
36. Of Reeds, Canes, and ſhrubs growing in water.
37. Of the oſier or willow, eight ſorts thereof: alſo what twigs beſides oſiers and willowes are good for winding and to bind withall: of buſhes and grieues.
38. The juice and liquor of trees: the nature of their wood and timber: alſo of hewing downe and falling trees.
39. Of the Larch tree, the Fir and the Sapine: the time of cutting them downe, and ſuch like.
40. Sundry ſorts of wood: the extraordinarie bigneſſe of trees: what wood is not ſubject to be worme-eaten nor to decay: other trees that be euerlaſting.
41. Of Woodwormes.
42. Of timber fit for carpentrie and building: what timber is good for this or that vſe; and namely, which is beſt and more firme and durable for rouſes of houſes.
43. The maner of glewing bourds and planks: alſo of rent and clouen ſtuffe.
44. The age of trees: which be they that laſt not long: of Miſſelto, and of the Prieſts Druydæ.

In ſumme, this booke comprehendeth of notable things, hiſtories, and obſeruations, an hundred and fiue and thirtie.

Latine Authors alledged.

M. Varro, Facialis, Nigidius, Cornelius Nepos, Hyginus, Maſſurius, Cato, Mutianus, Lucius Piſo, Trogus, Calphurnius, Baſſus, Cremutius, Sextius Niger, Cornelius Bocchus, Vitruvius, and *Gracinus*.

Forreine

The first Booke of

Forreine Writers,

Alexander Polyhistor, Hesiodus, Theophrastus, Democritus, Homer, Timæus the Mathematician.

¶ THE SEVENTEENTH BOOKE CONTAI-neth the nature of trees planted, set, and well *kept in Hort-yards.*

Chap.

1. Trees of wonderfull price.
2. Of the nature of heauen and the skie respectiue vnto trees: and what part of the skie they ought to regard.
3. The societie and accord of the clymat and the soile requisit for trees.
4. The qualities of the grounds in diuers regions.
5. Sundry kinds of ground and earth.
6. Of a kind of earth or marle that they in Britaine and France set much store by.
7. What the Greekes haue taught, and what rules they haue giuen as touching this point
8. Of more kinds of earth.
9. The vse of ashes, and of dung: what plants will enrich the ground and make it more battell: contrariwise, which they bee that burne out the heart thereof.
10. The planting or setting of trees: how to make a sion or slip to take and grow againe that is plucked from the root of the stocke.
11. Of transplanting out of Seminaries, yong trees that came of pepins and seeds.
12. The spaces betweene, and distance to bee regarded in planting trees: the shadow and droppings, either from house eaues or other trees.
13. What trees grow apace, and which thriue but slowly: also of the Savine.
14. The setting and graffing imps and sions of trees in the stocke or cliffe.
15. Of the manner how to graffe a vine.
16. Of inoculation or graffing in the leafe or scutcheon with a plaster.
17. An example or experiment of this kinde of graffing.
18. The order of planting and husbanding oliues: and which is the proper time for graffing.
19. What trees loue the companie and societie of others: the skill of baring the roots about trees, cutting off their superfluous spurns, and raising hils about the roots.
20. Of willow banks and rows of osiers: of places where reeds and canes are nourished: of other plants vsed to be cut, for poles, pearches, stakes, and forkes.
21. The manner of planting vines: the skill of trimming them.
22. The furrow about vines: and the pruning of them.
23. The manner of planting trees to serue for vines to run vpon.
24. How to keepe and preserue grapes: the diseases incident to trees.
25. Of sundrie prodigious and monstrous sights shewed in trees: also of an olive yard which in old time remooued, and was transplanted from one side of a great high way to the other.
26. Remedies against the diseases and imperfections or faults in trees.
27. Of scarification and paring of trees: and the manner of dunging them.
28. Divers medicines against venomous beasts and pismires, and other creatures noisome and hurtfull to trees.

In summe, here bee contained notable matters, stories, and obseruations, to the number of fiue hundred eightie and one.

Latine Authors alledged.

Cornelius Nepos, Cato Censorius, M. Varro, Celsus, Virgil, Hyginus, Sarsenna both father and sonne, *Scrophas, Calphurnius, Bassus, Trogus, Æmilius Macer, Græcinus, Columella, Atticus, Iulius, Fabianus, Sura Manlius, Dorsenus Mundus, Cains Epidicus,* and *L Piso.*

Forreine Writers.

Isidorus, Theophrastus, Aristotle, Democritus, Theopompus, king *Hiero,* K. *Attalus,* K. *Philometor, Archytas,*

Plinies Naturall Historie.

Archytas, Xenophon, Amphilochus the Athenian, *Anaxipolis* the Thasian, *Apollodorus* of Lemnos, *Aristophanes* the Milesian, *Antigonus* the Cymæan, *Agathocles* the Chian, *Apollonius* of Pergamus, *Bacchius* the Milesian, *Bion, Charea* the Athenian, also *Cherisstus* of Athens, *Diodorus* of Priene, *Dion* the Colophonian, *Epigenes* the Rhodian, *Evagon* the Thasian, *Euphron* the Athenian, *Androcion, Æschrion, Lysimachus,* who all three wrote of Agriculture: *Dionysius* who translated the bookes of *Mago,* and *Diophanes,* who out of *Dionysius* collected a Breviarie, and *Aristander* who made a treatise of Wonders and portenteous tokens.

¶ THE EIGHTEENTH BOORE IS A TREATISE of Agriculture or Husbandrie.

Chap.

1. That our ancestors in old time were exceeding much giuen to husbandrie. Also, the singular care that men had to looke vnto hortyards and gardens.
2. Of the first chaplets and guirlands vsed at Rome.
3. Of the acre of ground and halfe acre, called at Rome *Iugeris & Actus.* The antient ordinances concerning cattell: in what time the market for victuals was exceeding cheap at Rome: and who were famous & renowmed for husbandrie and tilling the ground.
4. The ancient manner of tilling the earth.
5. Where a ferme house is to bee seated and built conueniently: certain rules in old time concerning tillage.
6. A discourse as touching the praise of husbandmen: what rules are to be obserued to come by a good peece of land.
7. Diuers kinds of corne, and their nature.
8. That all sorts of graine will not grow euery where. Of other kindes of corne in the Leuant or East countries.
9. Of baking and pastrie: of grinding and of meale.
10. Of the fine cocked flour: of the white flour of wheat, and of other sorts of floure: the manner of moulding and making dough, and baking.
11. The manner of making and laying leaven: also of making past & bread: and when Bakers were first knowne at Rome. Of sieues, serces, and bulters; and of sodden wheat or frumentie.
12. Of pulse.
13. Of Rapes and Navewes in the Amiternine tract.
14. Of Lupines.
15. Of Vetches and Ervile.
16. Of Fenigreeke: of Messelline or dredge-corne: of Mung-corne or Bollimong for provander: of Clauer or three-leafed grasse called Medica, and of another Trefoile named Cytisus.
17. The faults and diseases in corne, graine, and pulse, and their remedies: what corne or pulse ought to be sowne with respect to the ground.
18. Of prodigious tokens obserued in corne. The skill of ploughing the ground: the diuers sorts of culters & shares in the plough.
19. The seasons of the yere fit to till & plough the ground. The manner of putting oxen to the yoke for the plough.
20. Of breaking clods or harrowing: of another kinde of tilling: the earing or second tilth or stirring the ground. And cutting the corne.
21. The manner of tilling and husbanding land.
22. Examples of diuers grounds: of such as are wondrous fertile: of a vine that beareth grapes twice in the yeare. The difference of waters.
23. The qualitie of the ground or soile: of compost or dunging lands.
24. The goodnesse of choise seeds: the manner of good sowing: how much seed of any corn an acre will take to be well sowne. The seasons of seedtime.
25. The obseruation of the stars for their apparition or occultation, their rising and setting, as well for day as night.
26. A recapitulation and briefe summarie of all things belonging to husbandrie. What is to bee done in the field euery moneth of the yeere.
27. That husbandmen should not so much regard the signe or the stars, as the fit season of the time for seednes. The rising or fall, the apparition or occultation of planets obserued in some hearbes. Of the rising and setting of stars.
28. Of medows: how they are to be repaired and

Chap.
and brought into hart: of fish-stones, hooks, sickles, and sithes: the time of sowing corne, and what fixed starres are of power about that time.
29. Of the seasons and times to be marked as well in summer as winter: what remedy for barraine and leane ground.
30. Of the harueſt: of wheat, of chaffe: how to keepe corne.
31. Of vintage, and autumne, and the conſtitution thereof.
32. What regard is to be had in the moon and her age, in husbandrie.
33. The conſideration of the winds for agricul (ture.
34. The bounds, limits, bawks, and waies, to be obſerued in cornefields.
35. Signes whereby a man may prognoſticat the diſpoſition of the weather.

In ſumme, there be contained in this booke of notable matters, ſtories, and obſeruations, two thouſand and ſix hundred.

Latine Authors alledged in this booke.

Maſſurius Sabinus, Caſſius Hemina, Verrius Flaccus, L. Piſo, Cornelius Celſus, Turannius Gracula, D. Syllanus, M. Varro, Cato Cenſorius, Scroſa, Sarſenna both father and ſonne, *Domitius Calvinus, Hyginus, Virgill, Trogus, Ouid, Gracinus, Columella, Tubero, L. Aruntius* who wrote in Greeke of Aſtronomie, and *Cæſar Dictator* who likewiſe wrote of the ſame argument, *Sergius Paulus, Sabinus Fabianus, M. Cicero, Calphurnius Baſſus, Atteius Capito, Manlius Sura,* and *Actius* who compiled a booke called Praxidica.

Forreine Authours.

Heſiodus, Theophraſtus, Ariſtotle, Democritus, K. *Hiero,* K. *Philometor,* K. *Attalus,* K. *Archelaus, Archytas, Xenophon, Amphilochus* of Athens, *Anaxipolis* of Thaſus, *Ariſtophanes* the Mileſian, *Apollodorus* the Lemnian, *Antigonus* the Cymæan, *Agathocles* of Chios *Apollonius* of Pergamus, *Ariſtander* the Athenian, *Bacchius* the Mileſian, *Bion* of Soli, *Chærea* of Athens, *Chæriſtus* likewiſe the Athenian, *Diodorus* of Priene, *Dion* of Colophon, *Epigenes* of Rhodes, *Evagoras* the Thaſian, *Euphronius* the Athenian, *Andration, Æſchrio,* and *Lyſimachus,* who wrote all three of Husbandrie, *Dionyſius* that tranſlated the works of *Mago,* and *Diophanes* who drew the ſame into an Epitome, *Thales, Eudoxus, Philippus, Callippus, Doſitheus, Permeniſcus, Meliton, Criton, Oenopides, Zeno, Euctemon, Harpalus, Hecataeus, Anaximander, Soſigenes, Hipparchus, Aratus, Zoroaſtres,* and *Archibius.*

¶ THE NINETEENTH BOOKE CONTAINETH a diſcourſe of the nature of Flax, and other wonderfull matters.

Chap.
1. The ſowing of Line ſeed: diuers kinds of flax: how it is dreſſed: of naperie & napkins: of linnen that will not burne nor conſume with fire: and when curtains were deuiſed at Rome about the theatres.
2. The nature of a kind of broom called Spart, when it came to be vſed firſt, how it is to be ordered & dreſſed, what plants both ſpring and alſo liue without roots.
3. Of Myſy, and of Muſhroms, of Tadſtoles or Muſhromes that bee broad and without a taile called Pezici, of Laſerpitium, and Magydaris, of Maddir, and the Fullers root Radicula, *i.* Sopeweed.
4. The manner of dreſſing and trimming gardens: alſo the ordering and due placing of other plants good for to be eaten; ouer and beſides corn, and the fruit of trees & ſhrubs.
5. The nature, the ſundry ſorts, and the ſtories of many plants that grow in gardens.
6. Of the roots, leaues, floures, and colours of garden hearbes.
7. How many daies it will be after the ſeeds of herbes be ſowne, or their ſlips ſet, ere they come vp: the nature of ſeeds: how herbes are to be ſown or ſet, and in what courſe and ranke: which herbes are but one of a kinde, and which they be that haue many kinds.
8. The nature of ſuch garden herbes as are good for the pot, or to make ſallads, and to ſeaſon meat withal; their kinds to the number of 46, with their ſtories & deſcriptions.
9. Of Fennell, and Hempe.
10. The diſeaſes and maladies that annoy gardens:

Chap.
dens, the remedies againſt the ſame: as alſo how to kill ants, caterpillers, and gnats.
21. What ſeeds be more or leſſe able to endure any hardneſſe or injurie, and which they be that ſalt waters are good for.
22. The manner of watering gardens: what herbes they be, which beeing tranſplanted and removed, prooue the better: and finally, the iuice, the ſweet ſauours, and reliſhnes of garden-herbes.

In ſumme, here are compriſed memorable things, ſtories, and obſeruations, a thouſand one hundred fortie and three.

Latine Authours cited.

M. Actius Plautus, M. Varro, D. Syllanus, Cato Cenſorius, Hyginus, Virgil, Mutianus, Celſus, Columella, Calphurnius Baſſus, Manlius Sura, Sabinus Tyro, Licinius Macer, Q. Hirtius, Vibius Ruſus, Ceſennius who wrote Sepurica, [*i.* a treatiſe of Gardening] *Caſtritius* likewiſe, and *Firmius,* (who both twaine made a worke of the ſame matter) and laſt of all *Petreius.*

Forreine Writers.

Herodotus, Theophraſtus, Democritus, Ariſtomachus, Menander, (who wrote a booke intituled Brochreſta, *i.* of things profitable for our life and diet) and *Anaxilaus.*

¶ THE TWENTIETH BOOKE COMPRISETH medicines out of thoſe Simples which are ſet and *ſowed in Gardens.*

Chap.
1. Of the wild Cucumber, and the iuice therof Elaterium.
2. Of the Cucumber as wel that which wandereth & groweth abroad called Anguinum, as that of the garden: alſo of the Pompion.
3. Of the wild gourds, and the Rape or Naues.
4. Diuers ſorts of Nauewes: of the wild Radiſh, of the garden Radiſh, and the Parſnep or Carot.
5. Of Staphylinum or the tame Parſnip. The herbe Gingidium or Chervill: of Seſelis or Siler-mountaine: of Elecampane, and of Onyons.
6. Of Porret or Leekes vſed to be cut, and of cabbage Leeks or headed, alſo of Garlicke.
7. Of wild Lettuce or Hawke-weed, called alſo Lactuca Caprina, of another kinde named Eſopus, of Woad, & tame garden Lettuce.
8. Diuerſe kindes of Beets, of Endiue, and Cichorie, of garden Endiue.
9. Of Cawle or Coleworts, of the wild Coleworts Lapſana, of Soldanella, of Squilla or the Sea-onion, of Scallions or Chibbols, and of Dog-leeks.
10. Of Sparage both tame and wild, of Libycum and Clarie.
11. Of Parſley, of Baulme, Smallage, & mountaine Parſley.
12. Of Aliſanders, and garden Baſill.
13. Of wild Baſill, of Rocket, of Creſſes, and Rue.
14. Of wild Mints, of garden Mints, of Peniroyall, of Nep, and Cumin.
15. Of Æthiopian Cumin, which ſtaieth vrine, of Capers, of Lovach, of Panace, of wild Origan or Majoram ſavage.
16. More of wild Oragan and Heracleotica, called alſo Gallinacea Cunila, *i.* Small majoram, Savorie or Orgament, Roſemarie, ſweet Majoram of the garden and of the mountaine.
17. Of Cockweed, Pepperwort, or Dittander, of garden Origan, of a kinde of Orgament called Onitis of Praſon, of Tragoriganum or wild Penroyall, the water Lillie or Nenuphar, of Lepidium, of Gith or Nigella Romana, and of Aniſe.
18. Of Dill, of Sacopænium, of Sagapen, of Poppies both white and blacke: the manner how to draw the iuice of herbes: and of Opium.
19. Of the wild Poppie, of horned Poppie, of Glaucium or Paralium, of Heraclium or Aphrum, of the confection Diacodium made of Poppie heads, of Tythimall.
20. Of Purcellane or Peplium, of Coriander and Orach.
21. Of Mallowes, and Malope, of Althæa or Marſh-

Chap.
Marshmallow, of Dockes, foure Docke or Sorell, the water Docke, the herbe Patience or Bulapathum.
22. Three kindes of Senvie, of Horehound, of running Thyme, of water Mints or Savorie, of Lineseed and Bleets.
Chap.
23. Of Meu, of garden Fennell, of wild Fennell or Myrsineum, of Hempe, of Fennel-geant, of Thystles, and Artichokes.
24. The confection called Triacle, the composition of *Antiochus*.

In summe, there be be compriſed in this booke of medicines, ſtories, and obſeruations, one hundred ſixtie and ſeven.

Out of Latine Authors.

Cato Cenſorius, Mar. Varro, Pompeius Lenæus, Gallio, Hyginus, Sextius Niger who wrote in Greeke, and *Iulius Baſſus* likewiſe, who wrote in the ſame language, *Celſus*, and *Antonius Caſar*.

Forreine Authours.

Democritus, Theophraſtus, Orpheus, Menander who made the booke *Biochreſta, Pythagoras*, and *Nicander*.

Out of Phyſitians.

Nicander, Hippocrates, Chryſippus, Diocles, Ophion, Heraclides, Hiceſius, Dionyſius, Apollodorus of Tarentum, *Apollodorus* the Citien, *Praxogoras, Philiſtonicus, Medius, Dienches, Cleophantus, Philiſtio, Aſclepiades, Cratevas, Petronius, Diodorus, Iolla, Eraſiſtratus, Diagoras, Andreas, Mneſicles, Epicharmus, Damion, Dalion, Soſimenes, Theopolemus, Metrodorus, Solon, Lycus,* * *Olympiades* of Thebes, *Phyllinus, Petreius, Miction, Glaucia* and *Xenocrates*.

* A woman who was a Midwife.

¶ IN THE XXI. BOOKE ARE CONTAINED the natures of Floures and Hearbs to make *Guirlands of*.

Chap.
1. The nature of floures and herbes that serve for Chaplets, the wonderfull varietie of floures.
2. Of Chaplets and noſegaies of floures. Who firſt deuiſed to ſet floures in order one with another. When Coronets or Guirlands of floures were inuented and took their name, and vpon what occaſion.
3. Who firſt gaue a preſent of a Chaplet garniſhed with ſiluer and gold foile. In what honor and eſtimation ſuch Guirlands were in old time. The honour done of old to *Scipio*. Of Coronets or Chaplets platted, wrythed, and braided. Alſo of a notable act of queen *Cleopatra* in making of Chaplets.
4. Of Roſes ſet in guirlands. Diuerſe ſorts of Roſes, and where they be ſet and doe grow.
5. Three kinds of Lillies. The ſtrange manner of ſetting them.
6. Of Violets, Marigolds, of Baccharis, Combretum, Aſarabacca or Folefoot, and Saffron.
7. Of the floures vſed in antient time in Guirlands & Chaplets. The great diuerſity that is in aromaticall and odoriferous ſimples: of Lavander, Spike, and Polium.
8. The colours of clothes reſembling floures. Of floure-Gentle or Paſſee-velours: of Chryſocome or Chryſites.
9. The honor done by Guirlands, and their excellencie: of Cyclaminum, of Melilot, of Claver or Trefoile, where of there bee three ſorts.
10. Of Origan, Thyme, Honey of Athens, of Doniza or Fleabane, of Iupiters floure, of Helenium or Elecampane, of Sothernwood, and Camomile.
11. Of Majoran, of Nyctigretum and Melilote, the white Violet or ſtocke Gillofre, of Codiaminum, alſo of wild bulbs or Rampions, of Heliochryſum, & Lychnis or Roſe Campion, and many other herbes growing on this ſide the ſea.
12. The manner how to nouriſh and keepe Bees: of their maladies and remedies thereto.

13. Of

Chap.
13. Of Honey that is venomous, remedies againſt ſuch venomous Honey, as alſo againſt another kind thereof, which maketh folke to be mad that taſte thereof.
14. Of a certain Hony that flies will not touch nor come neare to. Of Bee-hiues. The way how to keepe the Bees when they are at a fault for meat: and how their Wax is made.
15. Of herbes good to eat which come vp of their owne accord, and namely, thoſe that are prickie.
16. Of Thyſtles, of Parietarie of the wall, of Brambles and Orchanet.
17. The difference of many ſorts of herbes in their leafe. Which they be that doe floure all the yeere long, of the Daffodill, of Piſtana, and of the Gladen or Swordgraſſe.
18. Of diuers ſorts of Reeds, and of Cyperus, of the medicinable vertues which they haue, of Cypirus, and Squinanth.
19. The medicinable vertues of Roſes, of the Lillie, of Narciſſus, of the Violet, and of Baccharis or Ladies gloues, of Combretum and Aſarabacca.
20. Of Nard Celticke and Saffron, the vertues thereof and vſe in Phyſicke, of the ſweet ointment Crocomagma made of Saffron, of Spike or Lauender, of Polium, and Flour de lis, of Heliochryſum, Chryſocome, and Melilot.
21. Of ſweet Trifolie, of Thyme, the wild yellow Lillie Hemerocallis or the day floure, of Elecampane and Sothernwood.
22. the medicinable vertues of Camomile and Marjoram.
23. The vertues of Corne Roſe or Paſſe-flours Anemone.
24. The properties medicinable of Filipendula.
25. The vertues of Heliochryſum.
26. The medicines of Crowtoes.
27. The vertues of the Perywinckle, Butchers broome, of Sampier, and wild Baſill.
28. The medicinable vertues of Colocaſia, or the Ægyptian Beane.
29. The properties of Anthalium.
30. The vertues of Fewerfue.
31. The vertues of Night-ſhade or Petie Morrell, and Alkakengi.
32. Of Corchorus, *i.* Chickeweed, and of Cnicus, *i.* Carthanus or baſtard Saffron.
33. Of the herbe Perſoluta.
34. Of the weights and meaſures vſed in old time.

In ſumme, there be in this booke to be found medicines, ſtories, and worthy obſeruations, ſeuen hundred and thirtie.

Latine Authours alledged.

Cato Cenſorius, M. Varro, Maſſurius, Antias, C. Helius, Veſtinus, Vibius, Ruffinus, Hyginus, Pomponius Mela, Pompeius Lenæus, Cornelius Celſus, Calphurnius Baſſus, P. Largius, Licinius Macer, Sextius, and *Iulius Baſſus*, who both wrote in Greeke, and *Antonius Caſtor*.

Forreine Writers.

Theophraſtus, Democritus, Orpheus, Pythagoras, Mago, Menander who wrote the Treatiſe Biochreſta, *Nicander, Homer, Heſiodus, Muſæus, Sophocles*, and *Anaxilaus*.

Phyſicians.

Mneſtheus and *Callimachus*, who wrote both of Guirlands made of floures, *Phanias* the naturall Philoſopher or Phyſician, *Simus, Timariſtus, Hippocrates, Chryſippus, Diocles, Ophion, Heraclides, Hiceſias, Dionyſius, Apollodorus* of Citia, *Apollodorus* of Tarentum, *Praxagoras, Philiſtonicus* the Phyſician, *Dienches, Cleophantus, Philiſtio, Aſclepiades, Cratevas, Petronius, Diodotus, Iolla, Eraſiſtratus, Diagoras, Andreas, Mneſicles, Epicharmus, Damion, Dalion, Zoſimenes, Theopolemus, Metrodorus, Solon, Lycus, Olympias* the midwife of Thebes, *Phillinus, Petreius, Miction, Glaucias*, and *Xenocrates*.

¶ IN THE XXII. BOOKE ARE CONTAINED discourses as touching the estimation of *Hearbes*.

Chap.
1. Of certaine nations that vse herbes to beautifie their bodies.
2. Of clothes died with the juice of herbes.
3. Of the Chaplet made of the common medow grasse.
4. How rare these Guirlands of grasse were.
5. Which were the only men that had the honour to be crowned with the sad Chaplets.
6. The onely Centurion allowed to weare the said Guirlands.
7. Medicinable vertues obserued in the rest of herbes and floures that serue for Guirlands, and first of Eringe or sea Holly.
8. Of the Thystle or hearbe which they call Centum-capita.
9. Of Acanus and Liquerice.
10. Of Brambles or Thystles called Tribuli, their kinds and vertues.
11. The vertues and properties of the hearbe Stœbe.
12. Of Hippophyes, and of Hippope, *i.* the Tazill, and their properties.
13. Of the Nettle and the medicinable vertues of it.
14. Of the white dead Nettle or Archangell Lamium, and the vertues of it.
15. Of the hearbe Scorpius or Caterpillers, the kinds and vertues thereof.
16. Of Leucacantha or our ladies Thystle, and the vertues of it.
17. Of Parietarie of the wall called Helxine or Perdicum, of Feuerfew or Motherwort, Parthenium, of Sideritis, *i.* wall Sauge or stone Sauge, and the vertues thereof good for Physicke.
18. Of Chamæleon, the sundry sorts and properties that it hath.
19. Of Coronopus, *i.* Crow-foot Plantaine or Buckhorn Plantain, and the vertues therof.
20. Of Orchanet, as well the right as the bastard, and the vertues of them both.
21. Another kind of Orchanet called Onochelis, of Camomile, of the hearbe Lotus or common Melilot, of Lotometra, which is a kind of garden Lotus or sallade Clauer, of Heliotropia, *i.* Turnsoll or Solcium, and Tricoccum, a kind thereof, of Maiden haire called Adiantum and Callitricum.
22. Of bitter Lectuce or wild Cichorie, of Thesium, of Daffodill, of Halimus, of Brankursine, of Bupresti, of Elaphoboscum or Gratia Dei, of Scandix, *i.* wild Cheruill or shepheards needle, of the wild wort Iasione, of bastard Persly, Caucalis, of Lauer, or Sillybum, of Scolimus, *i.* the Artichoke or Limonia, of Sowthystle, of Chondrilla, and of Mushromes.
23. Of Toadstools, of Silphium, & of Laserjuice
24. The nature of Hony, of Mead or Hydromel: how it commeth that the fashions are changed in certaine kinds of meat, of honied wine, of wax. A discourse against the composition of many simples.
25. The medicinable vertues of corne.

In summe, here you shall find of medicines, stories, and obseruations, 906, gathered out of

The same Authours which were named in this booke before, and besides out of *Chrysermus*, *Eratosthenes*, and *Alcæus*.

¶ IN THE XXIII. BOOKE IS CONTAINED a Treatise of Hort-yard trees.

Chap.
1. The medicinable qualities of grapes fresh and new gathered, of Vine cuttings and of grape kernils, of the grape Theriace, or Treacle Grape, of dried Grapes or Raisins, of Astaphus, of Staueseacre, called also Pituitaria, of the wild Vine, of the white Vine which is called Bryonie, of the blacke Vine, of new wines, of diuerse and sundry sorts of wines, and also of vinegre.

2. Of

Chap.
2. Of the medicinable vertues of vinegre Squilliticke, of Oxymell or honied vinegre, of cuit, of the dregs or lees of wine, vinegre, and cuit.
3. The vertue of Oliues, of the leaues of the Olive, of the floure and ashes of the Olive, of the white and blacke fruit of the Olive: also of the dregs or grounds of oile.
4. Medicinable properties obserued in the leaues of the wild Olive, of the oile made of the wild vine floures, of the oile Cicinum, the oiles of Almonds, Baies, and Myrtles, the oile of Chamamyrsine or grand Myrtle, also of Cypresse, of Cytrons, & walnuts, &c.
5. The Ægyptian Palmetree that beareth Ben, also of the Date tree called Elate, and the vertues of them.
6. The medicinable vertues of sundry plants, namely, in their floure, leafe, fruit, boughs, barke, wood, juice, root, and ashes.
7. Of peares, and the obseruations to them belonging, of Figges both wild and sauage: of Erineum, and other sorts of plants, with their vertues.
8. Of Pine-nuts, and Almonds, of the Filbard and Walnut, of Fistickes and Chestnuts, of Charobs, Corneiles, Strawberrie trees, and Baies.
9. Of the Myrtle gentle, of Myrtidanum, and the wild Myrtle.

In summe, there be noted in this booke medicines, stories, and obseruations, a thousand foure hundred and nineteene.

Latine Authours cited.

C. Volgius, Pompeius Lenæus, Sextius Niger, and *Iulius Bassus*, who wrote both in Greeke, *Antonius Castor, M. Varro, Cornelius Celsus*, and *Fabianus*.

Forreine Writers.

Theophrastus, Democritus, Orpheus, Pythagoras, Mago, Menander the author of the booke Biochresta, *Nicander, Homer, Hesiodus, Musæus*, and *Anaxilaus*.

Physicians.

Mnestheus, Callimachus, Phanias the naturall Philosopher, *Simus, Tamaristus, Hippocrates, Chrysippus, Diocles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus* of Cittia, *Apollodorus* the Tarentine, *Praxagoras, Plistonicus, Medius, Dieuches, Cleophantus, Philistio, Asclepiades, Cratevas, Petronius, Diodotus, Iolla, Erasistratus, Diagoras, Andreas, Menecles, Epicharmus, Damion, Dalion, Sosimenes, Theopolemus, Metrodorus, Solon, Lycus, Olympias* the midwife of Thebes, *Phyllinus, Petreius, Miction, Glaucia*, and *Xenocrates*.

THE XXIIII. BOOKE TREATETH OF Trees growing wilde.

Chap.
1. Medicinable vertues obserued in wild trees.
2. The Ægyptian Beane tree, Lotus.
3. Mast and Acornes.
4. The grain or berrie of the tree Ilex, of Gals, of Misselto, of little bals and mast of trees, the root of Cirrus, and of Corke.
5. Of the Beech, the Cypresse tree, the tall Cedar, the fruit or berry therof, and of Galbanum.
6. Of Ammoniacum, Storax, Spondylium, Spagnus, the Terebinth tree, of Chamæpitys or Iua Muscata, of Esula or Pityusa, of Rosins, of the Pitch-tree and the Lentiske.
7. Of stiffe Pitch, of Tarre, of Pitch twice boyled, of Pissaphalt, of Sopissa, of the Torch tree and Lentiske.
8. The vertues of the Plane tree, the Ash, the Maple, the Aspe, the Elme, the Linden tree or Teil, the Elder, and Iuniper.
9. Of the Willow, the Sallow Amerina, and such like, good for windings and bands, also of Heath or Ling.
10. Of Virga Sanguinea, of the Oisier, of the Priuet, the Aller, of Yvie, of Cistus or Cissus, of Erythranum, of ground Yvie or Alehoufe, of Withwind, of Perwinke or Lesseron.

11. Of

Chap.
11. Of Reeds, of Paper cane, of Ebene, of Oleander, of Rhus or Sumach, of Madder, of Alysium, of Sopeweed, of Apaynum, of Rosemarie and the seed thereof, of Selago, of Samulus, of Gums, and the medicinable vertues of them all.
12. Of the Arabian thorne or thistle, of Bedegnar, of Acanthium and Acacia.
13. Of the common and wild thistle, of Erysisceptrum, of the thorne or thystle Appendix, of Pyxacanthum or the Barbarie tree: of Paliurus, of the Holly, of the Eugh tree and other bushes, with their vertues in Physicke.
14. Of the sweet Brier or Eglantine, of the Repice bush, of the white bramble Rhamnus, of Lycium, of Sarcocolla, of the composition named Oporice, and all their medicines.
15. Of Germander, of Perwinke or Lowrie, of Chamælea or Oliuell, of Chamæsyce, of ground yvie, of Lauander Cotton, of Ampelopraso or Vine Porret, of Stachys or wild Sauge, of Clinopodium or Horsetime, of Cudweed, of Perwinke of Ægypt, and their properties.
16. Of Wake-Robin, of Dragonwort or Serpentine of the garden, the greater Dragonwort, of Arisaron, of yarrow, and Millefoile: of bastard Nauew, of Myrrhis, and Onobrychis, with their vertues.
17. Of Coriacesia, Callicia, and Menais, with three and twentie other hearbes, and their properties, which are held by some to serue in Magick. Of Confidia and Aproxis: with others that reduce and reuiue loue againe.
18. Of Eriphia, Lanaria, and water Yarrow, with their vertues.
19. Of the herbes that growe vpon the head of statues and Images, of the hearbes that come out of riuers, of the herbe called Lingua simply, *i.* the tongue: of herbes growing within sieues, and vpon dunghils, of Rhodora, of the herbe Impia, *i.* the child before the parents, of the herbe Pecten veneris, of Nodia, of Cleiuers or Goose Erith, of Burs, of Tordile, of Dent de chien or Quiches, of Dactylus and Fenigreek, with their vertues.

In summe, herein are compriſed medicines, ſtories, and obſeruations, a thouſand foure hundred and eighteene: collected out of

Latine Authors.

C. Volgius, Pompeius Lenæus, Sextius Niger, and *Iulius Bassus*, who wrate both in Greeke; *Antonius Castor, M. Varro, Cornelius Celsus*, and *Fabius*.

Forreine Writers.

Theophrastus, Apollodorus, Democritus, Orpheus, Pythagoras, Mago, Menander the author of the booke Biochresta, *Nicander, Homer, Hesiodus, Musæus, Sophocles*, and *Anaxilaus*.

Phyſitians.

Mnesthens, Callimachus, Phanias the naturall Philosopher, *Simo, Timarisstus, Hippocrates, Chrysippus, Diocles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus* of Cittia, *Apollodorus* the Tarentine, *Praxagoras, Plistonicus, Medius, Dreuchus, Cleophantus, Philistio, Asclepiades, Cratevas, Petronius Diodotus, Iollas, Erasistratus, Diagoras, Andreas, Menecles, Epicharmus, Damion, Sosimenes, Theopolemus, Solon, Lycus, Metrodorus, Olympias* the Midwife of Thebes, *Phyllinus, Petreius, Miction, Glaucia*, and *Xenocrates*.

¶ IN THE XXV. BOOKE ARE CONTAINED the natures of hearbes and weeds that come vp of themselues. The reputation that hearbes haue been of. When *they began first to be vsed.*

Chap.
1. The properties and natures of wild herbes growing of their owne accord.
2. What Authours haue written in Latine of the nature and vse of hearbes. When the knowledge of simples began first to be practised at Rome. What Greeke Authours first

Chap.
first wrote of herbes, the inuention and finding out of sundry hearbes, the Physicke of old time. What is the cause that Simples are not so much in request and vse for Physicke as in old time. The medicinable vertues of the Eglantine and Serpentary or Dragon.
3. Of a certaine venomous fountaine in Almaine, the vertues and properties of the herbe Britannica, what diseases cause the greatest paines.
4. Of Moly, of Dodecatheos, of Pæonium, named otherwise Pentorobus, and Glycyside, of Panace or Asclepios, of Heraclium, of Panace Chironeum, of Panace Centaureum or Pharnaceum, of Heraclium Sideritum, of Henbane.
5. Of the herbe Mercurie female, of Parthenium, of Hermu-Pœa, or rather Mercurie: of Yarow, of Panace Heracleum, of Sideritis, of Millefoile, of Scopa regio, of Hemionium, Teucrium, Splenium, Melampodium or blacke Ellebore, and how many kinds there be of them. The medicinable vertues of blacke and white Ellebore: when Ellebore is to be giuen, how it is to be taken, to whom it is not to be giuen, also that it killeth Mice and Rats.
6. Of Mithridatium, of Scordotis or Scordium, of Polemonia, otherwise called Philetæria or Chiliodynama, of Eupatorie or Agrimonie, of great Centaurie otherwise called Chironium, of the lesse Centaurie or Libadium, called Fel Terræ, *i.* the gall of the Earth. Of Triorches, and their vertues.
7. Of Clymenus, Gentian, Lysimachia and Parthenius or Motherwort, Mugwort, Ambrose, Nenuphar, Heraclium, and Euphorbia, with all their vertues medicinable.
8. Of Plantaine, Bugloſſe, Hounds tongue, Oxe-eye or May weed, of Scythica, Hippice and Ischæmon, of Betonie, Cantabrica, Settarwort, of Dittander or Hiberis, of Celendine the greater, Celendine the lesse or Pilewort, of Canaria, of Elaphoboscos, of Dictamnum, of Aristolochia or Hartwort, how fishes will come to it for loue of bait, and so are soone caught. The counterpoysons against stinging of serpents, by these herbes abouenamed.
9. Of Argemonia, of Agaricke, Echium, Henbane, Vervaine, Blattaria, Lemonia, Cinquefoile, Carot, Persalata, the Clot Burre, Swines bread or Cyclaminus, Harstrang: all very good for the sting of serpents.
10. Of Danewort or Walwort, of Mullin, of Thelyphonon. Remedies against the sting of Scorpions, the biting of Toades and mad Dogs, and generally against all poysons.
11. Receits and remedies against head-ach and diseases of the head.
12. Of Centaurie, Celendine, Panace, and Henbane, and Euphorbium, all soueraigne medicines for the eies.
13. Of Pimpernell or Corchorus, of Mandragoras or Circeium, of Henbane, of Crethmoagrion, of Molybdæna, of Fumiterre, of Galengale, of Floure de lis, of Cotyledon, or Vmbilicus Veneris, of Housleeke or Sengreene, of Pourcellane, of Groundswell, of Ephemerum, of great Tazill, of Crow-foot: which affourd medicines against the infirmities and diseases of the eyes, eares, nosthrils, teeth, and mouth.

In summe, this Booke doth yeeld of medicines, stories, and obseruations, a thousand two hundred ninetie and two.

Latine Authours cited.

M. Varro, C. Volgius, Pompeius Lenæus, Sextius Niger, and *Iulius Bassus*, who both wrote in Greeke, *Antonius Castor*, and *Cornelius Celsus*.

Forreine Writers.

Theophrastus, Apollodorus, Democritus, king *Iuba, Orpheus, Pythagoras, Mago, Menander* who wrote Biochresta, *Nicander, Homer, Hesiodus, Musæus, Sophocles, Xanthus*, and *Anaxilaus*.

Phyſitians.

Mnesthens, Callimachus, Phanias the naturall Philosopher, *Timarisstus, Simus, Hippocrates, Chrysippus, Diocles, Ophion, Heraclides, Hicesius, Dionysius, Apollodorus* the Tarentine, *Praxagoras, Plisto-*

The first Booke of

Pliſtonicus, Medius, Dieuches, Cleophantus, Philiſtio, Aſclepiades, Cratevas, Iolla, Eraſiſtratus, Diagoras, Andreas, Mneſicles, Epicharmus, Damion, Theopolemus, Metroderus, Solon, Lycus, Olympias the mid-wife of Thebes, *Phyllinus, Petreius, Miction, Glaucias* and *Xenocrates*.

¶ IN THE XXVI. BOOKE ARE CONTAINED the medicines for the parts of mans bodie.

Chap.

1. Of new maladies, and namely of Lichenes, what they be, and when they began to raign in Italie firſt. Of the Carbuncle, of the white Morphew or Leproſie called Elephantiaſis, and of the Collicke.
2. The praiſe of *Hippocrates*.
3. Of the new practiſe in Phyſicke, of the Phyſician *Aſclepiades*, and by what meanes hee aboliſhed the old manner of practiſe, and ſet vp a new.
4. The ſuperſtitious follie of Magicke is derided. Alſo a diſcourſe touching the ſoule tettar called Lichenes, the remedie thereof: and alſo the infirmities of the throat and chawes.
5. Receits and remedies againſt the kings euil: alſo for the diſeaſes of the fingers and the breaſt, and againſt the Cough.
6. Of Mullin, of Cacalia, Tuſſilage or Folefoot, of Bechium, and Sauge, all herbes for to cure the cough.
7. For the paines of the ſides and chiſt, for the difficultie of breath, and thoſe that cannot take wind but ſitting or ſtanding vpright, for the pains of the liuer and the heart-ach, medicines appropriat to the lungs, difficultie of vrine, and the cough, for the breaſt, for inward vlcers, for the kidnies and imbecilitie of the liuer, to ſtay vomit and yexing, alſo for the pleuriſie and diſeaſe of the ſides and flankes.
8. Of all diſeaſes of the bellie and the parts either within it or neare vnto it. How to ſtay the flux thereof, or to make it looſe and ſoluble.
9. Of Peniroiall and Argemone.
10. Of water Lillie or Nenuphar, of abſtinence from *Venus*, of prouocation to fleſhly luſt, of Ragwort or Satyrium, called Erythraicum, of Crategis and Syderitis.
11. Generall remedies for infirmities of the feet, anckles, ioints, and ſinewes. Remedies againſt diſeaſes that hold and poſſeſſe the whole bodie. Of Mirthryda. Medicines and meanes to procure ſleepe: againſt the palſie, agues with cold fits, feauers or agues incident vnto labouring Horſes, Aſſes, and Mules: againſt franticke perſons. Of the herbe Chamæacta, of Houſleeke or ſtonecrop, and Pricke-madame, of S. *Antonies* fire.
12. Remedies againſt diſlocations in the joints, againſt the yellow jaundiſe, fellons, fiſtulaes, ſwelling of ventoſitie, burnes, ſcalds, and other diſeaſes, for ſinewes, and to ſtanch bloud.
13. Of the herb called Horſe-taile, Nenuphar, Harſtrange, Syderitis, of many other remedies good to reſtraine the flux of bloud: of Stephanomelis and Eriſithale, remedies againſt the wormes.
14. For vlcers, old ſores, and greene wounds: to take away werts, and of the herbe Polycnemon.
15. Many good experiments either for to prouoke or to ſtay the flux of womens months: foureigne remedies for the diſeaſes of the matrice: alſo to caſt forth the fruit within the wombe, or to containe it the full time, for to take away the blemiſhes and ſpots in the skin, and namely of the face, to colour the haire, to cauſe the haire to fall, alſo againſt the ſcab or maunge of foure-footed beaſts.

In ſumme, this booke leadeth you to medicines, ſtories and obſeruations, a thouſand two hundred ninetie and two: collected out of

Latine Authours.

M. Varro, C. Volgius, Pompeius Lenæus, Sextius Niger, and *Iulius Baſſus*, who writ both in Greeke, *Antonius Caſtor*, and *Cornelius Celſus*.

Forreine

Plinies Naturall Hiſtory.

Forreine Writers.

Theophraſtus, Apollodorus, Democritus, Iuba, Orpheus, Pythagoras, Mago, Menander the author of Biochreſta, *Nicander, Homer, Heſiodus, Muſæus, Sophocles, Xanthus* and *Anaxilaus*.

Phyſicians.

Mneſtheus. Callimachus the profeſſour of Phyſicke, *Timariſtus, Simus, Hippocrates, Chryſippus, Diocles, Ophion, Heraclides, Aiceſius, Dionyſius, Apollodorus* the Tarentine, *Praxagoras, Pliſtonicus, Medius, Dieuchus, Cleophantus, Philiſtio, Aſclepiades, Cratenas, Iolla, Eraſiſtratus, Diagoras, Andreas, Mneſicles, Epicharmus, Damion, Theopolemus, Metrodorus, Solon, Lycus, Olympias* the Midwife of Thebes, *Phyllinus, Petreius, Miction, Glaucias* and *Xenocrates*.

¶ THE XXVII. BOOKE COMPREHENDETH all other ſorts of herbes.

Chap.

1. The reſt of Herbes.
2. Of Aconitum, and how this herbe killeth Leopards or Panthers.
3. That God is the Creator of all things.
4. Of the hearbe Æthiopis, Ageratum, Aloe, Alcea, Alypum, Aliine, Androſacum, Androcæmon, Ambrocia, Reſtharrow, Anagyron, and Anonymon.
5. Of the great Burre, Of Cliuers or Gooſe graſſe, Aſplenum, Aſclepias, or Swallow-wort, Aſter or Bubonium, Aſcyrum or Aſcyroeides, Aphace, Aleibium, and Cockes combe.
6. Of Alus.
7. Of ſea Weeds or Reits, of Elder, wild Vine, and Wormewood.
8. Of Ballote or ſtinking Horehound, of Botrys or Oke of Ieruſalem, of Brabyla, of Bryon or Corallina, of Bupleuron, and Catanance, of Calla, Cerceia, Ciriium and Crategonum, Thelygonum, Crocodilium, Dogs ſtone, Chryſolachanum, Cucubalum, and Conferua or the riuer Spunge.
9. Of the graine called Coccos, Gnidia, of Tazill, of Oke fearne, of Dryophonum, of Elatine, of Empetrum or Perce-Pierre, of Epipactus or Elleborus, of Epimedum, Enneaphyllon, *i.* the nine leafed herbe, of Oſmund or fearne, of Fenmur Bubulum, *i.* Ox thigh, of Galeopſis or Galeobdolon, of Glaux or Eugalactum.
10. Of Glaucium, of Pæonie, Cudweed or Chamæzelum, of Galedragum, Holcos, Hyoſiris, Holoſteum, and Hypophæſtum.
11. Of Hypogloſſa, and Hypecoon, Idæa, Iſopyron, Spurge, Pat-delion, Lycopſis, Greimile, &c.
12. Of Medium, Mouſe-eare, Myagros, an herb called Natrix, Othone, Onoſma, Onopordos, Toads flax, Woodſoure or Alleluiah, Crowfoot, Knotgraſſe, Camomile, Phyteuma, Phyllon, Phellandrion, Phalaris, Polyrrhizon, Proſerpinaca or Knotgraſſe, Rhacoma, Reſeda and Stœchas.
13. Of Nightſhade and Dwale, of Smyrnium, Orpinum, Trichomanes, Thalictrum, Thlaſpi, Tragonias, Tragonis and Tragopogos, the ſerpent Spondylis. To conclude, that ſome diſeaſes and venomous things be not in all countries.

In ſumme, herein are comprehended medicines, ſtories, and notable obſeruations, 702.

Latine Authours cited.

Pompeius Lenæus, Sextius Niger, and *Iulius Baſſus*, who wrate both in Greeke, *Antonius Caſtor* and *Cornelius Celſus*.

Greeke Writers.

Theophraſtus, Apollodorus, Cittienſis, Democritus, Ariſtogiton, Orpheus, Pythagoras, Mago, Menander that wrote the Treatiſe Biochreſta, and *Nicander*.

Phyſicians.

Mneſtheus and his fellowes, as they went in the former booke.

¶ IN

¶ IN THE XXVIII. BOOKE ARE COMPREhended the medicinable vertues from *liuing creature.*

Chap.

1. The medicines and vertues obſerued in liuing creatures.
2. Whether charmes and bare words or characters auaile ought in Phyſicke. The prodigious tokens and preſages may take effect in ſome, and may be auerted and made fruſtrate by others.
3. Remedies euen in the bodies of men againſt enchauntments and Magicke.
4. Of certaine ſorceries, alſo the vertue of a mans ſpittle.
5. The regard of diet for a mans health.
6. of ſneeſing, the moderation to bee vſed in the act of *Venus* or companie with a woman, of other preſeruatiues of health.
7. What remedies and medicines a womans mans bodie doth affourd.
8. The medicinable properties in certaine ſtrange beaſts, namely, the Elephant, Lion, Cammell, Hyæna, Crocodile, Chamæleon, Skinke, Riuer-horſe, and Once.
9. The medicines which we haue from the bodies of wild beaſts and tame of the ſame kind. The vertue of milk, butter, and cheeſe, the obſeruations thereto belonging: alſo of fat or greaſe.
10. Remedies receiued from Bores and Swine, from Goats and wild Horſes: alſo from other beaſts, ſeruing to cure all manner of diſeaſes.
11. Other remedies for many kinds of malaChap.

dies, taken from liuing creatures.
12. For the ſpots and wems in the viſage: for the infirmities of the necke and of the breaſt.
13. Againſt the diſeaſes of the ſtomacke, loines, and reines.
14. To ſtay a laske, againſt the looſeneſſe of the ſtomacke, to cure the bloudie flix: the inflations of the bellie, ruptures, the prouocation to the ſeege without effect, the broad flat long wormes in the bellie, and the collicke.
15. Againſt the torments and paines in the bladder, againſt the ſtone, the infirmities in the priuie parts of man or woman: as alſo in the fundament, and the twiſt or groine, and the cure thereof.
16. For the gout, the falling euill, for thoſe that bee blaſted or ſtrucken with a planet, and bones broken.
17. Againſt Melancholie, and thoſe whoſe braines bee troubled with fanſies, the lethargie, dropſie, wild fire or tetter, and the paines or ach of the ſinewes, apt remedies.
18. To ſtaunch bloud, to cure vlcers or old ſores, cankers and ſcabs.
19. Medicines appropriat to womens diſeaſes.
20. Strange and wondrous things obſerued in ſundry beaſts.

In ſumme, here be reported medicines, ſtories, and obſeruations, to the number of a hundred eightie and fiue.

Latine Authours alledged.

M. Varro, L. Piſo, Fabianus, Verres, Antias, Verrius Flaccus, Cato Cenſorinus, Seruius Sulpitius, Licinius Macer, Celſus, Maſſurius, Sextius Niger who wrate in Greeke, *Bythus* the Dyrrhachian, *Ophilius* the Phyſitian, and *Granius* the Phyſitian.

Forreine Writers.

Democritus, Apollodorus who wrate a book entituled Myrſis, *Miletus, Artemon, Sextilius, Antæus, Homer, Theophraſtus, Lyſimachus, Attalus, Xenocrates* who wrote a booke called Diophros, and *Archelaus* likewiſe that wrote ſuch another, *Demetrius, Sotira, Elephantis, Salpe,* and *Olympias* of Thebes, fiue women and midwiues, *Diotimus, Iolla, Miction* of Smyrna, *Æſchines* the Phyſician, *Hippocrates, Ariſtotle, Metrodorus, Icacidas* the Phyſitian, *Heſiodus, Dialcon, Cæcilius, Bion* the authour of the booke Peri Dynamæan, *Anaxilaus,* and king *Iuba.*

¶ IN

¶ IN THE XXIX BOOKE ARE CONTAINED medicines from other liuing creatures.

Chap.

1. The firſt beginning and originall of the Art of Phyſicke: when Phyſicians began firſt to viſit Patients lying ſicke in their beds: the firſt Phyſitians that practiſed the cure of ſick perſons, by frictions, ointments, baths, hot-houſes, &c. Of *Chryſippus* and *Eraſiſtratus* their courſe and manner of practiſe: of Empiricke Phyſicke: of *Herophilus* and other famous Phyſitians: how often the Art and ſtate of Phyſicke hath altered: the firſt profeſſed Phyſician at Rome; when it was that hee practiſed: what opinion the ancient Romans had of Phyſicians: finally the imperfection and faults in that Art.
2. The medicinable vertues and properties obſerued in wooll.
3. The nature of eggs, and the vertues thereof

Chap.

good in Phyſicke.
4. Remedies in Phyſicke receiued from doggs and other creatures that are not tame but wild: alſo from foules: and namely againſt the ſtings of the venomous ſpiders Phalangia.
5. Of the Oſtrich greace, and the vertues thereof: of a mad dog: alſo remedies had from him, a lizard, geeſe, doues, and weaſils.
6. Medicines againſt the falling of the haire, and to make it grow againe: to kill nits: to recouer the haire of the eye-lids: to cure the dimneſſe and redneſſe, and generally all diſeaſes and accidents of the eyes, as alſo the ſwellings and inflammations in the kernils vnder the eares.

In ſum, there be medicines and other things worth obſeruation in this booke, to the number of fiue hundred twentie and one.

Latine Authors alledged.

M. Varro, L. Piſo, Verrius Flaccus, Antias, Nigidius, Caſſius Hemina, Cicero, Plautus, Celſus, Sextius Niger who wrote in Greeke, *Cæcilius* the Phyſician, *Metellus Scipio, Ovid* the Poet, and *Licinius Macer.*

Forreine Authours.

Philopater, Homerus, Ariſtotle, Orpheus Democritus, Anaxilaus.

Phyſitians.

Botrys, Apollodorus, Archidemus, Anaxilaus, Ariſton, Xenocrates, Diodorus, Chryſippus the Philoſopher, *Horus, Nicander, Apollonius* of Pytane.

¶ IN THE XXX. BOOKE ARE CONTAINED medicines for liuing creatures, ſuch as were not obſerued *in the former Booke.*

Chap.

1. The beginning of the black Science & Art magicke, when it began, who practiſed it firſt, and who were they that brought it into requeſt and reputation. Alſo the reſt of the medicines taken from beaſts.
2. Sundrie kinds of Magicke: the execrable and curſed parts plaid by *Nero,* and of Magicians.
3. Of Wants or Mouldwarps: of liuing creatures as well tame as ſauage which affourd

Chap.

remedies, and thoſe are digeſted in order according to the diſeaſes.
4. How to make the breath ſweet: againſt mols and ſpots diſfiguring the face: remedies for to cure the diſeaſes of the throat and chaws.
5. Againſt the Kings euill, and namely when the ſwelling is broken and doth run: to eaſe the pain of the ſhoulders, the heart and the parts about it.

6. For

Chap.
6. For the diseases of the lungs and liver: also to cure the casting and reiection of bloud vpward.
7. Remedies for the bloudie flix, and generally for all diseases of the bellie and the guts.
8. For the gravell and stone, for paines of the bladder, for swelling of the stones and rhe groine, of apostems or swellings in the kirnels and emunctories.
9. Against the gout of the feet and paines of other ioynts.
10. Remedies against many diseases that hold the whole bodie.
11. Against the jaundise, the phrensie, fevers, and dropsie.
12. Against the wild fire, carbuncles, fellons or vncoms, burnes, scaldings, and shrinking of the sinews.
13. To staunch bloud, to allay swellings in wounds: also to cure vlcers, greene wounds, and other maladies, diverse remedies, all taken from liuing creatures.
14. To cure womens secret maladies, and to helpe conception.
15. Many receits and remedies huddled together one with another.
16. Certaine miraculous things obserued in beasts.

In summe, this booke sheweth vnto vs medicines and memorable obseruations 54.

Latine Authors cited.

M. Varro, Nigidius, M. Cicero, Sextius Niger who wrate in Greeke, and *Licinius Macer.*

Forreine Writers.

Eudoxus, Aristotle, Hermippus, Homer, Apion, Orpheus, Democritus, and *Anaxilaus.*

Physicians.

Botrys, Horus, Apollidorus, Menander, Archimedes, Ariston, Xenocrates, Diodorus, Chrysippus, Nicander, Apollonius, Pitanaus.

¶ THE XXXI. BOOKE SHEWETH MEDICINES gathered from fishes and water creatures: also it deliuereth vnto vs strange *and wonderfull things as touching the Waters.*

Chap.
1. Admirable matter obserued in the waters.
2. The difference of waters.
3. The nature and qualitie of waters: how to know good and wholesome waters from them that be naught.
4. The reason of some waters, that spring on a suddain, & so likewise cease and giue ouer.
5. Many historicall obseruations of waters.
6. The manner of water conduits, and how to draw them from their heads: when and how waters are to bee vsed which naturally are medicinable: how farre forth navigation or sailing vpon the salt water is good for the health: medicines made of sea water.
7. Divers kinds of salt: the preparing and making thereof, together with the vertues medicinable of salt, and other considerations thereto belonging.
8. Of the fish Scamber or the Mackrell: of fish pickle: of Alex, a kind of brine or fish sauce
9. The nature of Salt, and the medicines made of it.
10. Sundrie sorts of Nitre, the handling and preparation thereof, the medicines and obseruation to it pertaining.
11. The nature of Spunges.

This booke comprehendeth medicines and notable obseruations 266.

Latine Authours alledged.

M Varro, Cassius of Parma, *Cicero, Mutius, Cor. Celsus, Trogus, Ovid, Polybius,* and *Sornatius.*

Forreine Writers.

Callimachus, Ctesias, Endicus, Theophrastus, Eudoxus, Theopompus, Polyclitus, Iuba, Lycus, Apion, Epigenes,

Epigenes, Pelops, Apelles, Democritus, Thrasillus, Nicander, Memander the Comicall Poet, *Attalus, Sallustius, Dionysius, Andreas, Nicreatus, Hippocrates, Anaxilaus.*

¶ IN THE XXXII. BOOKE ARE CONTAINED other medicines behind, from fishes and water creatures.

Chap.
1. Of the fish Echeneis, his wonderfull propertie: of the Torpedo, and the Sea-hare: marueilous things reported of the red sea.
2. The naturall industrie, docilitie, and gentlenesse of some fish: where they will come to hand and take meat at a mans hand: in what countries fishes serue in stead of oracles.
3. Of those fishes that liue both on land and water: the medicines and obseruations as touching Castoreum.
4. Of the sea Tortoise: many vertues medicinable obserued in sundry fishes.
5. Receits of medicins taken from water creatures, digested and set in order according to sundry diseases, & first against poyson and venomous beasts.
6. Of Oisters, Purple shell-fishes, & sea-weeds called Reits: their vertues medicinable.
7. Medicins against the shedding of the haires how to fetch haire againe: also against the infirmities of eies, ears, teeth, and to amend the vseemely spots in the face. (ly:
8. Many medicins set down together vnorder-
9. Remedies for the diseases of the liuer and sides, stomacke and bellie: others also disorderly put downe.
10. Against feuers and agues of all sorts, and many other infirmities.
11. A rehearsall of all creatures liuing in the sea, to the number of 122.

In summe, y e hauehere medicines, stories, and obseruations, 928.

Latine Authors.

Licinius Macer, Trebius Niger, Sextius Niger who wrote in Greeke, *Ovid* the Poet, *Cassius Hemina, Mecanas,* and *L. Attcius.*

Forreine Writers.

K. *Iuba, Andreas,* * *Salpe, Pelops, Apelles* of Thasos, *Thrasillus,* and *Nicander.*

* A Woman

¶ THE XXXIII. BOOKE DECLARETH the natures of Mettals.

Chap.
1. In what estimation were the mines of gold at the first in the old world: the beginning of gold rings: the proportion of gold that our ancestors had in their treasure: the degree of knights or gentlemen at Rome: the priuiledge to weare gold rings, and who only might so do.
2. The courts and chambers of judges or iustices at Rome: how often the gentlemen of Rome and men of armes changed their title: the presents giuen to valiant souldiours for their braue seruice in the wars: the first crowns of gold that were seene.
3. The ancient vse of gold besides, both in men & women: of the golden coine: when copper and brasse money was first stamped: when gold and siluer was put into coine: before mony was coined, how they vsed brasse for exchange in old time. At the first taxation and leuie made of Tribute, what was thought to be the greatest wealth; and at what rate were the best men sessed. How often and at what time gold grew into credit and estimation.
4. The mines of gold, and how naturally it is found: when the statue or image of gold was first seene: medicinable vertues in gold.
5. Of Borras, and six properties of Borras in matters of Physicke: the wonderfull nature that it hath to foder all mettals, and giue them their perfection.
6. Of Siluer, Quick-siluer, Antimonie, or Alabaster: the drosse or refuse of siluer: also the scum or some of siluer called Litharge.
7. Of Vermilion: in what account it was in old time among the Romanes: the inuention thereof:

Chap.
thereof: of Cinnabaris or Sangdragon vsed in painting and Physick: diuers sorts of vermillion, and how painters vse it.
8. Of Quicksiluer artificiall: the maner of gilding siluer: of touchstones: diuers experiments to trie siluer: the sundry kinds therof
9. Of mirroirs or looking-glasses: of the siluer in Ægypt.
10. Of the excessiue wealth of some men in money: who were reputed for the richest men: when it was that at Rome they began to make largesse and scatter money abroad

Chap.
to the commons.
11. Of the superfluitie of coine, and the frugalitie of others as touching siluer plate, beds and tables of siluer: when began first the making of excessiue great and massiue platters and chargers of siluer.
12. Of siluer statues: the grauing and chasing in siluer, & other workmanship in that mettall
13. Of Sil, of Azur, of superfice Azur named Nestorianum: also of the Azur called Cœlum: that euery yere these kinds be not sold at one price.

This booke hath in it of medicines, stories, and obseruations, 1215.

Latine Authors alledged.

L. Piso Antius, Verrius, M. Varro, Cor. Nepos, Messula, Rufus, Marsus the Poet, *Buthus, Iulius Bassus*, and *Sextius Niger*, (who wrote both of Physicke in Greeke) and *Fabius Vestalis*.

Forreine Writers.

Democritus, Metrodorus Scepsius, Menechmus, Xenocrates, and *Antigonus*, who wrate all three of the feat and skill of grauing, chasing and embossing in mettall: *Heliodorus*, who wrote a booke of the rich ornaments and oblations of the Athenians: *Pasiteles*, who wrote of wonderfull pieces of worke: *Nymphodorus, Timæus* who wrate of Alchymie or minerall Physicke: *Iolla, Apollodorus, Andreas, Heraclydes, Diagoras Botryensis, Archimedes, Dionysius, Aristogenes, Democritus, Menesicles, Attalus* the Physician, *Xenocrates* the sonne of *Zeno*, and *Theomnestes*.

¶ THE XXXIIII. BOOKE TREATETH of other Mettals.

Chap.
1. Mines of Brasse, Copper, Iron, Lead, & Tin.
2. Sundry kinds of Brasse, namely Corinthian, Deliacke, and Ægineticke.
3. Of goodly candlesticks, & other ornaments of temples.
4. The first images made at Rome: the originall of statues: the honour done to men by statues: sundry sorts and diuers forms of them.
5. Of statues pourtraied in long Robes; and of many others who first erected images vpon columnes and pillars at Rome: when they were allowed first at the cities charges: also what maner of statues the first wer at Rome.
6. Of statues without gowne or cassocke, and some other: the first statue pourtraied on horsebacke at Rome: when the time was that all Images as well in publike places as priuat houses were abolished at Rome and put downe: what women at Rome were allowed to haue their statues; and which were the first erected in publike place by forrein nations.

Chap.
7. The famous workemen in making & casting Images: the excessiue price of Images: of the most famous and notable colosses or gyant-like images in the citie of Rome.
8. Three hundred sixtie and six peeces of work wrought in brasse by most curious and excellent artificers.
9. What difference there is in Brasse: the diuers mixtures with other mettals: how to keepe brasse.
10. Of Brasse ore called Cadmia, and for what it is good in Physicke.
11. The refuse or scum of Brasse, Verdegris: the skales of brasse and copper, steele, copper rust, or Spanish greene: of the collyrie or eye-salue called Hieracium.
12. Of a kinde of Verdegris named Scolecia: of Chalcitis, *i.* red Vitriol, Mysy, Sory, and Copporose or Vitriol, *i.* blacke Nil.
13. Of the foile of Brasse named white Nil or Tutia: of Spodium, Antispodium, of Diphryges, and the Trient of Servilius.

14. Of

Chap.
14. Of Iron and mines of Iron: the difference also of Iron.
15. Of the temperature of Iron: the medicinable vertues of Iron, and the rust of Brasse and Iron: the skales of Iron, and the liquid plastre named of the Greekes Hygemplastrum.

Chap.
16. The mines of Lead: of white and blacke Lead.
17. Of Tin, Of Argentine Tin, and some other minerals.
18. Medicins made of Lead & refuse of Lead, of Lead ore, of Ceruse or Spanish white, of Sandaricha of red Orpiment.

In summe, here are contained natable matters, stories, and obseruations, 815.

Latine Authours cited.

L. Piso, Antias, Verrius, M. Varro, Messala, Rufus, Marsus the Poet, *Buthus, Iulius Bassus*, and *Sextius Niger*, who wrote both in Greeke of Physicke, and *Fabius Vestalis*.

Forreine Writers.

Democritus, Metrodorus Scepsius, Menechmus, Xenocrates, Antigonus, and *Duris*, (who all foure wrote of grauing, chasing, and embossing mettals, a worke entituled *Toreutice:*) *Heliodorus*, who described the ornaments and oblations hanged vp in Athens: *Nymphodorus, Andreas, Heraclides, Diagoras, Botryensis, Iolla, Apollodorus, Archimedes, Dionysius, Aristogenes, Diomedes, Menesicles, Xenocrates* the sonne of *Zeno*, and *Theomnestus*.

¶ IN THE XXXV. BOOKE IS SHEWED IN what account Painting was in old time.

Chap.
1. The honour and regard of Pictures in times past.
2. In what price Images were of old.
3. When Images were first erected and set vp in publicke place, as also in priuat houses, with their scutcheons and armes: the beginning of pictures: the first draught of Picturs in one simple colour: the first Painters, and how ancient they were in Italie.
4. Of Roman Painters: the first time that Painting and Picturs grew into credit: who they were that drew their victories in colors vpon tables, and set them forth to be seen: and when forrein Pictures began to be of some good reckoning at Rome.
5. The art and cunning of drawing pictures: the colours that painters vse.
6. Of colours naturall and artificiall.
7. What colour will not abide to be laid wet: what colours they painted withall in old time: at what time first the combats of sword-fencers at vtterance, were set forth in painted tables to be seene.
8. How ancient the art of Painting is, when it began: a catalogue of the excellent workemen in that kind, and how their workemanship was prised and esteemed.
9. The first that contended & stroue who could

Chap.
paint best: also who first vsed the pencill.
10. Of Pictures so liuely drawne that birds were deceiued therwith: what is the hardest point in Painting.
11. The way to still birds that they sing and chatter not: who was the first that deuised to enamell, or to set colours with fire, and with the pencill painted arched rouls and vaults; and among, the wonderful prises that Pictures were set at in old time.
12. The first inuentors of potterie: of Images made of clay and cast in moulds: also of vessels made of earth, and their price.
13. Sundry sorts of earth for potters: of the dust or sand of Puteoli: of other kindes of earth which turne to be hard stone.
14. Of walls made by casting in moulds: also of bricke walls, and the manner of making them.
15. Of Brimstone & Alume, their diuers kinds and vse in Physicke.
16. Of sundry sorts of earth, & namely Samia, Eretria, Chia, Selenusia, Pingitis, and Ampelitis, and the vse they haue in Physicke.
17. Sundry sorts of chalke for fullers to scoure clothes, to wit, Cimolia, Sarda, Vmbrica, of a kind of earth called Saxum, as also that giueth a siluer color & is called Agentaria.

18. Who

Chap.
18. Who were they that enriched their slaues after they were enfranchised, and who they were of slaues came vp and grew to great wealth and power.

Chap.
19. Of the earth that coms out of the Island Galeta: of the earth Clupea: also, of that which commeth from the Balear Islands, and the Isle Ebusa.

In sum, the medicins, histories, and obseruations in this booke, amount to *956*.

Latine Authors alledged.

Messala the Oratour, *Messala* the Elder, *Feneſtella*, *Atticus*, *Verrius*, *M. Varro*, *Cor. Nepos*, *Decius Eculeo*, *Mutianus*, *Meliſſus*, *Vitruvius*, *Caſſius Seuerus Longulanus*, *Fabius Vaſtalis*, who also wrote of Painting.

Forreine Writers.

Paſiteles, *Apelles*, *Melanthius*, *Aſclepiodorus*, *Euphranor*, *Paraſius*, *Heliodorus*, who wrote of the Pictures and other ornaments set vp at Athens, *Metrodorus* (who likewise wrote of Architecture, to wit, Masonrie and Carpentrie:) *Democritus*, *Theophraſtus*, *Apion* the Grammarian who also made a booke af Minerall or Chymicke Physicke, *Nymphodorus*, *Andreas*, *Heraclides*, *Iolla*, *Apollodorus*, *Diagoras Botryenſis*, *Archidemus*, *Dionyſius*, *Ariſtogenes*, *Demanes*, *Mneſicles*, *Xenocrates*, the scholler of *Zeno*, and *Theomneſtus*.

¶ THE XXXVI. BOOKE TREATETH of Stones.

Chap.
1. The nature and propertie of stones: the superfluitie and expense about buildings, of marble.
2. Who first shewed at Rome columnes of marble in publike place.
3. The first that brought columns of marble to Rome out of forreine countries.
4. The first workemen that were commended for cutting in marble, and at what time that inuention began.
5. Excellent peeces of worke in marble to the the number of 126. The cunning and curious workmen themselues: of the white marble of the Island Paros. The stately and admirable sepulchre Mausoleum.
6. When they began at Rome to build with marble: who was the first that ouercast the outside of walls with marble: at what times this or that kind of marble was taken vp in building at Rome: who cut marble first and brought it into leaues or thin plates by cutting: the manner thereof: also of sand.
7. Of the hard stone of Naxos, and Armenia: sundry kinds of marble.
8. Of the Alabastre marble of Lygdinum and Alabandicum.
9. Of the great obeliske at Thebes in Ægipt, and at Alexandria: of that also which is in the great cirque or shew-place at Rome.
10. Of that obeliske which standeth in Mars field at Rome, and serueth for a Gnomon or Stile in a quadrant or dyall.
11. Of a third obeliske at Rome in the Vatican.
12. Of the Pyramides in Ægipt, and a monstrous Sphynx of a wonderfull height.
13. Of the Mazes or Labyrinths in Ægipt, the Isle Lemnos, and in Italie.
14. Of hanging gardens made vpon terraces: of a great towne where all the houses were built vpon vaults and arches, seeming to hang in the aire: also of the temple of *Diana* in Ephesus.
15. Of the stately temple of Cyzicum: of a certaine rocke of stone called Fugitiue: of an Echo that rendreth the voice seuen fold: of an house built without naile or pin: of the sumptuous and wonderfull buildings at Rome.
16. Sundry kinds of the Load stone: the medicinable vertues and properties thereof.
17. Of certain stones which soone eat & consume dead bodies that be laid therein: of others againe that preserue them long: of the stone Asius, and the vertues of it.
18. Of Iuorie digged out of the earth: of stones conuerted into bones: of stones that represent palms imprinted in them, and of other kinds.
19. Of

Chap.
19. Of Curalius, or a kind of Marquesite called Pyrites, and the vertues thereof: of the stone Ostracites, and Amiantus & the properties of it: of the stone Melitites, and the power thereof: of the Geat and his medicinable properties: of Spunge stones: of the stone Phrygius and his nature.
20. Of the Bloud-stone, and fiue sorts of it; and of Schistus.
21. Foure kinds of the Ægle stone, of the stone within the bellie of them called Callimus: of the stones Samius and Arabus: also of Pumish stones.
22. of stones meet for to make Apothecaries mortars, of soft stones, of the stone Specularis, & of Flints, of the shining stone Phengites, of whetstones, and other stones meet for building: of stones that will resist the fire and abide all weather and tempest.

Chap.
23. Of Cesterns, of Limestone, sundry sorts of sand, the tempering of sand and lime for mortar: the ill building of some walls: of parget and roughcast: also columnes and buttresses in building.
24. The medicinable vertues of Quickelime, of Maltha, and Plaster.
25. Of pauements: when they were first vsed at Rome: of terraces and paued floores lying open to the aire aboue: of certaine pauements called Græcanica: and when arched and embowed worke first began.
26. The first inuention of glasse: the manner of making it of a kind of glasse called Obsidianum: sundry forts of glasse in great varietie.
27. Wonderfull operations of fire: the vertues thereof medicinable, and the prodigious significations and presages by fire.

In summe, here you may find medicines, stories, and obseruations, in all 523.

Latine Authors.

M. Varro, *Cælius*, *Galba*, *C. Iulius*, *Mutianus*, *Cor. Nepos*, *L. Piso*, *Tubero*, *Seneca*, *Fabius Vastalis*, *Annius*, *Fœcialis*, *Fabius*, *Cato Censorius*, and *Vitruvius*.

Forreine Writers.

Theophraſtus, *Praxitiles*, K. *Iuba*, *Nicander*, *Sotacus*, *Sudines*, *Alexander*, *Polyhiſtor*, *Apion*, *Pliſtonicus*, *Duris*, *Herodotus*, *Euemerus*, *Ariſtagoras*, *Dionyſius*, *Artemidorus*, *Butoridas*, *Antiſthenes*, *Democritus*, *Demoteles*, and *Lyceas*.

¶ IN THE XXXVII. BOOKE IS DECLARED the originall of pretious stones.

Chap.
1. The pretious stone of *Polycrates* the tyrant, also of K. *Pyrrhus*: who were the best lapidaries, & could cut excellently wel in stone: the first man that at Rome ware a pretious stone vpon his finger.
2. The rich stones that were shewed in the triumph of *Pompey* the Great: the nature and vertues of the Crystall stone: the costly vessels made thereof, and the superfluous expence that way: when the vessels of Cassidoine called Myrhhina, were first inuented: the wastfull expence in them: the nature and properties of them: what lies the Greekes haue told as touching Amber.
3. The true original and beginning of Amber: the medicinable vertues thereof: the sundry kinds, and the excessiue cost that folke were at to get them: of Lincurium and the pre-

Chap.
perties of it.
4. Of Diamonds, and their kinds: their vertues: also of Pearls.
5. Of the Hemerauld and diuers sorts of it: of other greene pretious stones cleare and transparant.
6. Of the true Opall stones, their diuers kinds, and which be counterfeit: the meanes how to try them: also of diuers other rich stones
7. Of Rubies and carbuncles: which be counterfeit: the waies to proue whether they be good or no. Also of other ardent stones like fire.
8. Of the Topaze, and all the kinds: of the Turquois: of other greene stones that bee not cleare through.
9. Sundry sorts of the Iasper stone.
10. Of certaine pretious stones set downe in order

Chap.
order according to the Alphabet.
11. Of some pretious stones which take their denomination of the parts of mans bodie: also from other liuing creatures, & of those which haue the names from other things.
12. Of other new stones growing naturally: of counterfeit and artificiall stones: of their sundry formes and fashions.
13. The manner and way how to proue fine stones from other.

In summe, here are to be read of notable matters, worthy histories, and speciall obseruations, to the number of 1300, gathered out of

Latine Authours.

M. Varro, the Records of Romane triumphs, *Mecœnas*, *Iacchus*, and *Cornelius Bocchus*.

Forreine Writers.

K. *Iuba*, *Xenocrates* the disciple of *Zeno*, *Sudines*, *Æschylus*, *Philoxenus*, *Euripides*, *Nicander*, *Satyrus*, *Theophrastus*, *Chares*, *Philomenes*, *Democrates*, *Xenotimus*, *Metrodorus*, *Sotacus*, *Pytheas*, *Timæus* the Sicilian, *Niceas*, *Theocrestus*, *Asaruba*, *Mnasea*, *Theomenes*, *Ctesias*, *Mithridates*, *Sophocles*, K. *Archelaus*, *Callistratus*, *Democritus*, *Ismenias*, *Olympicus*, *Alexander Polyhistor*, *Apion*, *Horus*, *Zoroastres*, and *Zachalias*.

THE SECOND BOOKE OF THE HISTORIE OF NATVRE,

WRITTEN BY *C. PLINIVS* SECVNDVS.

CHAP. I.

¶ *Whether the World be finite, and but one.*

THE World, and this, which by another name men haue thought good to call heauen (vnder the pourprise and bending cope whereof, all things are emmanteled and couered) beleeue we ought in all reason to be a God, eternall, vnmeasurable, without beginning, and likewise endlesse. What is without the compasse hereof, neither is it fit for men to search, nor within mans wit to reach and conceiue. Sacred it is euerlasting, infinit, all in all, or rather it selfe all and absolute: finite and limited, yet seeming infinite: in all motions orderly and certaine: howbeit in shew and iudgement of man, vncertaine: comprehending and containing all whatsoeuer, both without and within: Natures worke, and yet very Nature it selfe, producing all things. Great folly it is then, and meere madnesse, that some haue deuised and thought in their minde to measure it; yea, and durst in writing set down the dimensions thereof: that others againe, by occasion hereupon taken or giuen, haue deliuered and taught, That worlds there were innumerable: as if we were to beleeue so many natures as there were Heauens: or if all were reduced to one, yet there should be so many Sunnes and Moones neuerthelesse, with the rest also of those vnmeasurable and innumerable starres in that one: as though in this pluralitie of worlds we should not alwaies meet with the same question still at euery turne of our cogitation, for want of the vtmost and some end to rest vpon: or if this infinitenesse could possibly be assigned to Nature, the worke-mistresse and mother of all; the same might not be vnderstood more easily in that one Heauen which wee see; so great a worke especially and frame as it is. Now surely a fantasticall folly it is of all other follies, to go forth of it, and so to keepe a seeking without, as if all things within were well and clearely knowne already: as who would say, a man could take the measure iust of any third thing, who knoweth not his owne: or the minde of man see those things, which the very World it selfe may not receiue.

CHAP. II.

¶ *Of the forme and figure of the World.*

THat the forme of heauen is round, in fashion of an absolute and perfect globe, the name thereof principally, and the consent of all men agreeing to call it in Latine *Orbis*, (*i.*) a roundle; as also many naturall reasons, do euidently shew: to wit, not onely for that such a figure euery way falleth and bendeth vpon it selfe, is able to beare and vphold it selfe, includeth and compriseth it selfe, hauing need thereto of no ioints, as finding in any part thereof no end nor beginning: or because this forme agreeth best to that motion, whereby euer and anon it must turne about:

(as hereafter it ſhall appeare) but alſo becauſe the eie ſight doth approue the ſame: in that look which way ſoeuer you will thereupon, it ſeemeth to bend downeward, round, and euen on all ſides, ſhewing a iuſt Hemiſphere; a thing not incident poſſibly to any other figure.

Chap. III.

¶ *Of the motion of Heauen.*

That the world thus framed, in a continuall and vneeſſant circuit, with vnſpeakable ſwiftneſſe turneth round about in the ſpace of foure and twenty houres, the riſing and ſetting ordinarily of the Sunne hath left cleare and doubtleſſe. Now, whether it being in height infinite, and therefore the ſound of ſo huge a frame, whiles it is whirled about, and neuer reſteth in that reuolution, cannot be heard with our eares, I cannot ſo eaſily reſolue and pronounce: no more I aſſure you, than I may auouch the ringing of the ſtarres that are driuen about therewith, and roll with all their owne ſpheres: or determine, that as the Heauen moueth, it doth repreſent indeed a pleaſant and incredible ſweet harmonie both day and night: although to vs within, it ſeemeth to paſſe in ſilence. That there be imprinted therein the pourtraicts of liuing creatures, and of all things beſides without number, as alſo that the body thereof is not all ouer ſmooth and ſlicke (as we ſee in birds egs) which excellent Authors haue termed *Tenerum*, is ſhewed by good arguments: for that by the fall of naturall ſeeds from thence of all things, and thoſe for the moſt part blended and mixed one with another, there are ingendred in the world, and the ſea eſpecially, an infinite number of ſtrange and monſtrous ſhapes. Ouer and beſides, our eie-ſight teſtifieth the ſame; whiles in one place there appeareth the reſemblance of a waine or chariot, in another of a beare, the figure of a bull in this part, of a * letter in that, and principally the middle circle ouer our head, more white than the reſt, toward the North pole.

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Chap. IIII.

¶ *Why the World or Heauen is called Mundus.*

Verily for mine owne part, moued I am and ruled by the generall conſent of all nations. For, the World, which the Greekes by the name of ornament, called κόσμος, we for the perfect neatneſſe and abſolute elegancie thereof, haue termed *Mundus*. And without all queſtion, Heauen we haue named *Cælum*, as it were Engrauen and garniſhed, according as *M. Varro* interpreteth it. And hereto maketh much the orderly ranke of things therein, and namely the circle called *Signifer*, or the Zodiake. ſet forth and diuided by the formes of twelue liuing creatures therein portraied: together with the manner of the Sunnes race throughout them, keeping euer the ſame courſe ſtill, for ſo many ages paſt.

Chap. V.

¶ *Of the foure Elements.*

Neither ſee any doubt made as touching the Elements, That they be foure in number. The higheſt, Fire: from whence are thoſe bright eies of ſo many ſhining ſtarres. The next, Spirit, which the Greekes and our countrey men by one name called Aire: Vitall this element is, and as it giueth life to all things, ſo it ſoone paſſeth through all, and is intermedled in the whole: by the power wherof, the earth hangeth poiſed and ballanced iuſt in the midſt, together with the fourth element of the Waters. Thus by a mutuall entertainment one of another, diuers natures are linked and knit together: ſo as the light elements are kept in & reſtrained by certain weights of the heauier, that they flie not out: and contrariwiſe the maſſier be held vp, that they fall not downe, by means of the lighter, which couet to be aloft. So, through an equall endeuor to the contrary, each of them hold their owne, bound as it were by the reſtleſſe circuit of the very world: which, by reaſon that it runneth euermore vpon it ſelfe, the earth falleth to be loweſt, and the middle of the whole: and the ſame hanging ſteadily by the poles of the heauen, peiſeth thoſe

thoſe elements by which it hangeth in a counterballance. Thus it alone reſteth vnmoueable, whiles the whole frame of the world turneth about it: and as it is knit and vnited by all, ſo all reſt and beare vpon the ſame.

Chap. VI.

¶ *Of the ſeuen Planets.*

Betweene the earth and heauen there hang in the ſame ſpirit or element of aire aboue named, ſeuen ſtars, ſeuered one from another, and diſtant aſunder certaine ſpaces, which of their variable motion wee call wandring planets, whereas indeed none ſtray and wander leſſe than they. In the middeſt of them the Sun taketh his courſe, as being the greateſt and moſt puiſſant of all the reſt: the very ruler, not of times and ſeaſons onely, and of the earth, but alſo of the ſtarres and heauen it ſelfe. Beleeue we ought, this Sun to be the very life, and (to ſpeake more plainely) the ſoule of the whole world, yea, and the principall gouernance of nature: and no leſſe than a God or diuine power, conſidering his workes and operations. He it is that giueth light to all things, and ridden them from darkneſſe: he hideth the other ſtarres, and ſheweth them again: he ordereth the ſeaſons in their alternatiue courſe: he tempereth the yeare, ariſing euer freſh and new againe, for the benefit and good of the world. The lowring dimneſſe of the skie he diſpatcheth, yea, and cleareth the darke miſts and clow lineſſe of mans minde: to other ſtars likewiſe he lendeth out his owne light. Moſt excellent, right ſingular he is, as ſeeing all, & hearing all. For this, I ſee, is the opinion of *Homer* (the prince of learning) as touching him alone.

Chap. VII.

¶ *Of God.*

I Suppoſe therefore that to ſeeke after any ſhape of God, and to aſſigne a forme and image to him, bewraieth mans weakeneſſe. For God, whoſoeuer hee be [if haply there be any other, but the very world] and in what part ſoeuer reſiant, all ſenſe he is, all ſight, all hearing; he is all life, all ſoule, all of himſelfe. And verily to beleeue that there be gods innumerable, and thoſe according to mens vertues and vices, to wit, Chaſtitie, Concord, Vnderſtanding, Hope, Honour, Clemencie, Faith; or (as *Democritus* was of opinion) that there are two gods onely, and no more; namely, Puniſhment, and Benefit: Theſe conceits, I ſay, make mens idleneſſe and negligence the greater. But all commeth of this, That fraile and craſie mortall men, remembring wel their owne infirmitie, haue digeſted theſe things apart, to the end that each one might from thence chuſe to worſhip and honour that whereof he ſtood in need moſt. And hereupon it is, that in ſundry nations we finde the ſame gods named diuerſly, according to mens deuotion: and in one region ye ſhall haue innumerable gods. The infernall powers beneath likewiſe, yea, and many plagues haue been raunged by themſelues, and reckoned for gods in their kinde, whileſt with trembling feare wee deſire that they were pacified. Which ſuperſtition hath cauſed a chappell to be dedicated to the Feuer, in the mount Palatium, euen by publicke order from the State. Likewiſe an altar to *Orbona*, neere the temple of *Lares*: becauſe another erected to Bad Fortune in Eſquiliæ. And thereby we may conceiue that there are a greater number of gods in heauen aboue, than of men vpon earth: ſince that euery one of their owne accord make ſo many gods as they liſt, fitting themſelues with *Iunoes* and *Genij* for their patrons. Now certain Nations there be that account beaſts, yea, and ſome filthie things for gods; yea and many other matters more ſhamefull to be ſpoken: ſwearing by ſtinking meats, by garlicke, and ſuch like. But ſurely, to beleeue that gods haue contracted mariage, and that in ſo long continuance of time no children ſhould be borne between them: alſo that ſome are aged, and euer hoarie and gray: others againe young and alwaies children: that they be blacke of colour and complexion, winged, lame, hatched of egs, liuing and dying each other day; are meere fooleries, little better than childiſh toies. But it paſſeth and exceedeth all ſhameleſſe impudencie, to imagine adulteries amongſt them: eſtſoones alſo chiding, ſcolding, hatred, and malice: and more than that, how there be gods, patrons of theft and wickedneſſe. Whereas in very deed, a god vn-

to a man is he, that helpeth a man: and this is the true and direct path-way to euerlasting glory. In this way went the noble Romans in old time: and in this tract at this day goeth, with heauenly pace, *Vespasian Augustus*, both he and his children: *Vespasian*, I say, the most mightie ruler of the whole world: whiles he relieueth the afflicted State of the Romane Empire and Common-weale. And this is the most antient manner of requitall to such benefactours, That they should be canonized gods. And hereof came the names as well of all other gods, as of the starsand planets (which I haue mentioned before) in recognisance of mens good deserts. As for *Iupiter* verily and *Mercurie*, and other princes raunged among the gods, who doubteth that they were called otherwise among themselues? and who confesseth not how these be celestiall denominations, to expresse and interpret their nature. G

Now, That the soueraigne power and deity, whatsoeuer it is, should haue regard of mankind H
* is a toy and vanity worthy to be laughed at. For can we chuse but beleeue, can we make any doubt, but needs that Diuinity and Godhead must be polluted with so base & manifold a ministery? And hardly in manner may it be iudged, whether of the twain be better and more expedient for mankinde to beleeue, that the gods haue regard of vs; or to be perswaded that they haue none at all: considering, That some men haue no respect and reuerence at all of the gods; others againe so much, as it is a very shame to see their superstition. Addicted these are and deuoted to serue them by forrein magicke ceremonies: they weare their gods vpon their fingers in rings, yea, they worship and adore monsters: they condemne and forbid some meats; yet they deuise others for them. Impose they do vpon them hard and vengible charges to execute, not I
suffering them to rest and sleep in quiet. They chuse neither mariages nor children, ne yet any one thing els, but by the approbation & allowance of sacred rites and mysteries. Contrariwise, others there are so godlesse, that in the very capitoll they vse deceit, and forsweare themselues euen by *Iupiter*, for all that he is ready to shoot his thunderbolts: and as some speed wel enough with their wicked deeds and irreligion, so others again feele the smart and are punished by the faines whom they adore, and the holy ceremonies which they obserue.

Howbeit, betweene both these opinions, men haue found out to themselues a middle Godhead and diuine power, to the end that we should giue still a more vncertaine coniecture as touching God indeed. For throughout the whole world, in euery place, at all times, and in all mens mouths, Fortune alone is sought vnto and called vpon: she only is named and in request; shee K
alone is blamed, accused, and endited. None but she is thought vpon; she only is praised, she only is reproued and rebuked: yea, and worshipped is she with railing and reprochfull tearms: and namely when she is taken to be wauering & mutable: and of the most sort supposed also blind; rouing at randon, vnconstant, vncertaine, variable, and fauoring the vnworthy: whatsoeuer is laid forth, spent, and lost, whatsoeuer is receiued, woon and gotten: all that comes in, all that goes out is imputed to Fortune: and in all mens reckonings and accounts she makes vp the booke, and sets all streight. So abiect we are, so seruile also and enthralled to Lots, that euen the very chance of Lots is taken for a god, than which nothing maketh vs more doubtfull and ignorant of God.

Now there are another sort, that reiect Fortune & Chance both, and wil not abide them, but L
attribute the euents and issues of things, to their owne seuerall stars, and go by the fatall horoscope or ascendent of their natiuitie: affirming that the same shall euer befall, which once hath bin set downe and decreed by God: so as he for euer after may sit still and rest himselfe. And this opinion beginneth now to settle and take deep root, insomuch as both the learned, and also the rude and ignorant multitude, run that way on end. From hence (behold) proceed the warnings & admonitions of lightenings, the fore-knowledge by Oracles, the predictions of Soothsayers, yea, and other contemptible things not worthy to be once spoken of; as sneesing, and stumbling with the foot, are counted matters of presage. *Augustus Cæsar* of famous memorie hath made report and left in writing, that his left foot shooe was vntowardly put on before the right, on that very day, when he had like to haue miscarried in a mutiny among his souldiers. M

Thus these things euery one doe enwrap and entangle silly mortall men, void of all forecast and true vnderstanding: so as this only point among the rest remaines sure and certain, namely, That nothing is certaine: neither is there ought more wretched and more proud withall; than man. For all liuely creatures elfe take care onely for their food, wherein Natures goodnes and bountie of it selfe is sufficient: which one point verily is to be preferred before all good things

Where let Christs sicke heed, and be thankefull to God for the light reuealed vnto them out of the holy scriptures.

things whatsoeuer, for that they neuer thinke of glory, of riches, of seeking for dignities and promotions, nor ouer and aboue, of death. Howbeit, the beleefe that in these matters the gods haue care of mens estate, is good, expedient, and profitable in the course of this life: as also that the vengeance and punishment of malefactors may well come late (whiles God is busily occupied otherwise in so huge a frame of the world) but neuer misseth in the end: and that man was not made next in degree vnto God; for this, That he should be wel-neare as vile and base as the bruit beasts. Moreouer, the chiefe comfort that man hath, for his imperfections in Nature, is this, That euen God himselfe is not omnipotent, and cannot do all things: for neither he is able to worke his owne death, would he neuer so faine, as man can do when he is wearie of his life; the best gift which he hath bestowed vpon him, amid so great miseries of his life: nor indow
B mortall men with euerlasting life: ne yet recall, raise, and reuiue those that once are departed and dead: nor bring to passe, that one who liued, did not liue; or he that bare honorable offices, was not in place of rule and dignity. Nay, he hath no power ouer things done and past, saue only oblitiion: no more than he is able to effect (to come with pleasant reasons and arguments to proue our fellowship therin with God) that twise ten should not make twenty: and many such things of like sort. Whereby (no doubt) is euidently proued, the power of Nature, and how it is she, and nothing els, which we call God. I thought it not impertinent thus to diuert and digresse to these points, so commonly diuulged, by reason of the vsuall and ordinarie questions as touching the Essence of God.

C Chap. VIII.

¶ *Of the Nature of Planets, and their circuit.*

LEt vs returne now to the rest of Natures workes. The starres which we said were fixed in heauen, are not (as the common sort thinketh) assigned to euery one of vs; and appointed to men respectiuely; namely, the bright & faire for the rich; the lesse for the poore: the dim for the weak, the aged and feeble: neither shine they out more or lesse, according to the lot and fortune of euery one, nor arise they each one together with that person vnto whom they are appropriate; and die likewise with the same: ne yet as they set and fall, do they signifie that any bodie is dead.
D There is not, ywis, so great societie betweene heauen and vs, as that together with the fatall necessitie of our death, the shining light of the starres should in token of sorrow go out and become mortall. As for them, the truth is this; when they are thought to fall, they doe but shoot from them a deale of fire, euen of that aboundance and ouermuch nutriment which they haue gotten by the attraction of humiditie and moisture vnto them, like as we also obserue daily in the wikes and matches of lampes or candles burning, with the liquour of oile. Moreouer, the coelestiall bodies, which make and frame the world, and in that frame are compact and knit together, haue an immortall nature, and their power and influence extendeth much to the earth; which by their effects and operations, by their light and greatnesse might be knowne, notwithstanding they are so high and subtill withall, as we shal in due place make demonstration. The
E manner likewise of the heauenly Circles and Zones shall be shewed more fitly in our Geographicall treatise of the earth, forasmuch as the consideration thereof appertaineth wholly thereunto: onely we will not put off, but presently declare the deuisers of the Zodiake, wherin the signes are.

The obliquitie and crookednesse thereof, *Anaximander* the Milesian is reported to haue obserued first, and thereby opened the gate and passage to Astronomie, and the knowledge of all things: and this happened in the 58 Olympias. Afterwards *Cl oftratus* marked the signes therin, and namely those first of *Aries* and *Sagittarius*. As for the sphere it selfe, *Atlas* deuised long before. Now for this time we will leaue the very bodie of the starry heauen, and treat of all the rest betweene it and the earth.

I Certaine it is, that the Planet which they call *Saturne*, is the highest; and therefore seemeth least: also that he keepeth his course, and performeth his reuolution in the greatest circle of all: and in thirtie yeares space at the soonest, returneth againe to the point of his first place. Moreouer, that the mouing of all the Planets, and withall of Sun and Moone, go a contrarie course vnto the starrie heauen, namely, to the left hand (*i.* Eastward:) whereas the said heauen alwaies

hasteneth to the right[i. Westward.] And albeit in that continuall turning with exceeding celerity, those planets be lifted vp aloft, and carried by it forcible into the West, and there set: yet by a contrarie motion of their owne, they passe euery one through their seuerall waies Eastward, and all for this, that the aire rolling euer one way, and to the same part, by the continuall turning of the heauen, should not stand still, grow dul, & as it were congealed, whiles the globe thereof resteth idle, but dissolue and cleaue, parted thus, & diuided, by the reuerberation of the contrarie beams, and violent crosse influence of the said planets. Now, the Planet *Saturne* is of cold and frozen nature, but the circle of *Iupiter* is much lower than it, and therfore his reuolution is performed with a more speedy motion, namely, in twelue yeres. The third of *Mars*, which some call the Sphere of *Hercules*, is firy and ardent, by reason of the Suns vicinity, and wel-neere in two yeares runneth his race. And hereupon it is, that by the exceeding heate of *Mars*, and the vehement cold of *Saturne*, *Iupiter*, who is placed betwixt, is well tempered of them both, and so becommeth good and comfortable. Next to them is the race of the Sun, consisting verily of 360 parts[or degrees:] but to the end that the obseruation of the shadowes which he casteth, may return againe iust to the former marks, fiue daies be added to euery yeare, with the fourth part of a day ouer and aboue. Whereupon euery fifth yeere leapeth and one odde day is set to the rest: to the end that the reckoning of the times and seasons might agree vnto the course of the Sun. Beneath the Sun a goodly faire star there is, called *Venus*, which goeth her compasse, wandering this way and that, by turnes: and by the very names that it hath, testifieth her emulation of Sun and Moone. For all the while that she preuenteth the morning, and riseth Orientall before, she taketh the name of *Lucifer* (or Day-star) as a second Sun hastning the day. Contrariwise, when she shineth from the West Occidentall, drawing out the day light at length, and supplying the place of the Moone, she is named *Vesper*. This nature of hers, *Pythagoras* of Samos first found out, about the 42 olympias, which fel out to be the 142 yere after the foundation of Rome. Now this planet in greatnesse goeth beyond all the other fiue: and so cleare and shining withall, that the beames of this one star cast shadowes vpon the earth. And hereupon commeth so great diuersitie and ambiguitie of the names thereof: whiles some haue called it *Iuno*, other *Isis*, and othersome the Mother of the gods. By the naturall efficacie of this star, all things are engendred on earth: for whether she rise East or West, she sprinckleth all the earth with dew of generation, and not onely filleth the same with seed, causing it to conceiue, but stirreth vp also the nature of all liuing creatures to engender. This planet goeth through the circle of the Zodiake in 348 daies, departing from the Sun neuer aboue 46 degrees, as *Timæus* was of opinion. Next vnto it, but nothing of that bignesse and powerful efficacie, is the star *Mercurie*, of some cleped *Apollo*: in an inferiour circle he goeth, after the like manner, a swifter course by nine daies: shining sometimes before the Sun-rising, otherwhiles after his setting, neuer farther distant from him than 23 degrees, as both the same *Timæus* and *Sosigenes* doe shew. And therefore these two planets haue a peculiar consideration from others, and not common with the rest aboue named. For those are seene from the Sun a fourth, yea, and third part of the heauen: oftentimes also in opposition ful against the Sun. And all of them haue other greater circuits of full reuolution, which are to be spoken of in the discourse of the great yeare.

Chap. IX.

¶ *Of the Moones nature.*

BVt the Planet of the Moone, being the last of all, most familiar with the earth, and deuised by Nature for the remedie of darknesse, out-goeth the admiration of all the rest. She with her winding and turning in many and sundry shapes, hath troubled much the wits of the beholders, fretting and fuming, that of this starre, being the neerest of all, they should be most ignorant, growing as it doth, or else waining euermore. One while bended pointwise into tips of hornes: another whiles diuided iust in the halfe, and anon againe in compasse round: spotted sometime and darke, and soone after on a sudden exceeding bright: one while big and full, and another while all at once nothing to bee seene. Sometime shining all night long, and otherwhiles late it is ere she riseth: shee also helpeth the Sunnes light some part of the day: eclipsed, and yet in that eclipse to be seene. The same at the moneths end lieth hidden, at what time (it is supposed) shee laboureth

A reth and trauelleth not. At one time yee shall see her below, and anon aloft: and that not after one manner, but one while reaching vp close to the highest heauen, and another while ready to touch the mountains: sometimes mounted on high into the North, and sometime cast down below into the South. Which seuerall constitutions and motions in her, the first man that obserued, was *Endymeon*: and thereupon the voice went, That he was enamoured vpon the Moone. Certes, thankfull we are not, as we ought to be, vnto those who by their trauell and carefull endeuour haue giuen vs light in this light. But delighted rather we are wonderously (such is the pestilent wit and wicked disposition of man) to record in Chronicles, bloud shed and murders: that lewd acts and mischieuous deeds should be knowne of them, who otherwise are ignorant of the world it selfe. Well, to proceed, the Moon being next to the Centre, and therfore of least
B compasse, performes the same course and circuit in seuen and twentie daies, and one third part of a day; which *Saturne* the highest planet runnes (as we said before) in thirty yeres. After this, making stay in coniunction with the Sun two daies, forth she goes, and by the thirtieth day at the most, returneth to the same point and ministery againe: the mistresse, if I may so say, and the teacher of all things Astronomicall, that may be known in heauen. Now by her meanes are we taught that the yeere ought to be diuided into twelue moneths: for as much as, the Moone meeteth or ouertaketh the Sun so many times before he returneth to the same point where he began his course. Likewise that shee loseth her light (as the rest of the planets) by the brightnes of the Sun, when she approcheth neere. For borrowing wholly of him her light, shee doth shine: much like to that which we see glittering and flying too and fro in the reflection and re-
C uerberation of the Sun-beames from the water. And hereupon it is, that she, by her more mild and vnperfect power dissolueth, yea and increaseth, so great moisture as she doth, which the sun beames may consume. Hence it comes also, that her light is not euen and equall in sight, because then only when she is opposite vnto the Sunne, she appeareth full: but all other daies she sheweth no more to vs here on earth, than she conceiueth light of the Sunne. In time verily of coniunction or change, she is not seene at all: for that whiles she is turned away, all the draught of light, she casteth thither backe againe, from whence she receiued it. Now, that these planets are fed doubtles with earthly moisture, it is euident by the Moone: which so long as she appeareth by the halfe in sight, neuer sheweth any spots, because as yet shee hath not her full power of light sufficient, to draw humour vnto her. For these spots be nothing else but the dregs of
D the earth, caught vp with other moisture among the vapors.

Chap. X.

¶ *Of the Sunne and Moones eclipse: and of the Night.*

MOreouer, the eclipse of the Moone and Sunne (a thing throughout the vniuersall contemplation of Nature most maruellous, and like a strange and prodigious wonder) doth shew the bignesse and shadow of these two planets. For euident it is, that the Sunne is hidden by the comming betweene of the Moone: and the Moone againe by the opposition of the Earth: also that the one doth quit the other, in that the Moone by her inter-
E position bereaueth the Earth of the Sunnes raies, and the earth againe doth the semblable by the Moone. Neither is the Night any thing else but the shade of the Earth. Now the figure of this shadow resembleth a pyramis, pointed foreward, or a top turned vp side downe: namely, when as it falleth vpon it with the sharpe end thereof, nor goeth beyond the heights of the Moone; for that no other starre is in that manner darkened: and such a figure as it, alwaies endeth point-wise. And verily, that shadowes grow to nothing in great space of distance, appeareth by the exceeding high flight of some foules. So as the confines of these shadowes, is the vtmost bound of the aire, and the beginning of the fire. Aboue the Moone all is pure and light some continually. And we in the night doe see the starres, as candles or any other lights from out of darkenesse. For these causes also the Moone in the night season is eclipsed onely.
F But the reason why the Sun and Moone, are not both in the eclipse ta set times and monethly, is the winding obliquitie of the Zodiake, and the wandering turnings of the Moone one while farre South, and another while as much North (as hath been said:) and for that these planets do not alwaies in their motion meet just in the points of the ecliptick line, to wit, in the head or taile of the Dragon.

Chap. XI.

¶ *Of the magnitude of Starres.*

THe reason of this lifteth vp mens mindes into heauen: and as if they beheld and looked downe from thence, discouer vnto them the magnitude of the three greatest parts of the whole world. For the Sunnes light could not wholly be taken away from the earth, by the Moone comming betweene, in case the earth were bigger than the Moone. But the huge greatnesse of the Sunne is more certainely knowne, both by the shadow of the Earth, and the bodie of the Moone: so as it is needlesse to search and inquire into the largenesse thereof, either by proofe of eie-sight, or by coniecture of the minde. How vnmeasurable it is, appeareth euidently by this, That trees which are planted in limits from East to West, casteth shadowes equall in proportion; albeit they be neuer so many miles assunder in length: as if the Sunne were in the middest of them all. This appeareth also about the time of the equinoctiall in all regions meridionall, when the Sunne shineth directly plumbe ouer mens heads, and causeth no shadow. In like manner, the shadowes of them that dwell Northerly vnder the Solsticiall circle in Summer, falling all at noone tide, Northward, but at Sunne-rising, Westward, doing the same demonstration. Which possibly could not be, vnlesse the Sunne were far greater than the earth. Moreouer, in that, when he rises, he surpasses in breadth the hil Ida, compassing the same at large both on the right hand and the left, and namely, being so farre distant as he is. The eclipse of the Moone doth shew also the bignesse of the Sunne, by an infallible demonstration; like as himselfe eclipsed, declareth the littlenesse of the earth. For whereas there be of shadowes three formes and figures: and euident it is, that if the darke materiall body which casteth a shadow, be equall in bignesse to the light, then the shadow is fashioned like a columne or piller, and hath no point at the end: if it be greater, it yeeldeth a shadow like a top directly standing vpon the point, so as the nether part thereof is narrowest, and then the shadow likewise is of infinite length: but if the said body be lesse than the light, then is represented a pyramidall figure like an hey-cocke, falling out sharpe pointed in the top; which manner of shadow appeareth in the Moones eclipse: it is plaine, manifest, and without all doubt, that the Sunne is much bigger than the earth. The same verily is seen by the secret and couert proofes of Nature it selfe. For why in diuiding the times of the yeere, departeth the Sunne from vs in the winter? marry, euen because by meanes of the nights length and coolenesse, he would refresh the earth which otherwise no doubt he should haue burnt vp: for, it notwithstanding, he burneth it in some measure, so excessiue is the greatnesse thereof.

Chap. XII.

¶ *The inuentions of man as touching the obseruation of the heauens.*

THe reason verily of both eclipses, the first Romane that published abroad and diuulged, was *Sulpitius Gallus*, who afterward was Consull, together with *M. Marcellus*: but at that time being a Colonell, the day before that King *Perseus* was vanquished by *Paulus*, he was brought forth by the Generall into open audience before the whole host, to fore-tell the eclipse which should happen the next morning: whereby he deliuered the armie from all pensiuenesse and feare, which might haue troubled them in the time of battell, and within a while after he compiled also a booke thereof. But among the Greeks, *Thales Melesius* was the first that found it out, who in the eight and fortieth Olympias, and the fourth yeere thereof, did prognosticate and foreshew the Sunnes eclipse that happened in the reigne of *Halyattes*, and in the 170. yeere after the foundation of the citie of Rome. After them, *Hipparchus* compiled his Ephemerides, containing the course and aspects of both these planets, for six hundred yeeres ensuing: comprehending withall the moneths according to the calculation & accountings of sundry nations, the daies, the houres, the situation of places, the aspects, and latitudes of diuers townes and countries; as the world will beare him witnesse: and that so much the more diuinely than if he had been priuie to Natures counsels. Great persons and excellent of a diuine disposition, who aboue the reach of all capacitie of mortall men found out the reasons of the course of so mighty starres and diuine powers: and whereas the silly minde of men was

was before set and to seeke, fearing in these eclipses of the starres, some great wrong and violence, or death of the planets, secured them in that behalfe: in which dreadful feare stood *Stesichorus* and *Pindarus* the Poets (notwithstanding their lofty stile,) and namely at the eclipse of the Sun, as may appeare by their poems. As for the Moone, mortall men imagine, that by magicke, forceries, and charmes, she is inchanted, and therefore helpe her in such a case when she is eclipsed by dissonant ringing of basons. In this fearefull fit also of an eclipse, *Nicias* the Generall of the Athenians, as a man ignorant of the course thereof, feared to set saile with his fleet out of the hauen, and so greatly endangered and distressed the state of his countrey. Feare chieue yee then for your excellent wit, O noble Spirits, interpretors of the heauens, capable of Natures works, and the deuisers of that reason whereby ye haue surmounted both God and man. For who is he, that seeing these things, and the painfull ordinarie trauels, since that this terme is now taken vp, of the starres; would not beare with his owne infirmitie, and excuse this necessitie of being born to die? Now for this present I will briefly and summarily touch those principall points which are confessed and agreed vpon, touching the said eclipses, hauing lightly rendred a reason thereof in most needfull places: for neither such prouing and arguing of these matters belongs properly to our purposed worke; neither is it lesse wonder to be able to yeeld the reason and causes of all things, than to be resolute and constant in some.

Chap. XIII.

¶ *Of Eclipses.*

CErtaine it is, that all Eclipses in 222 moneths haue their reuolutions, and return to their former points: as also that the Sun's eclipse neuer happeneth but vpon the change of the Moone, namely either in the last of the old, or first of the new, which they call conjunction: and that the Moone is neuer eclipsed but in the full, and alwaies somewhat preuents the former Eclipse. Moreouer, that euery yeare both planets are eclipsed at certaine dayes and houres vnder the earth. Neither be these eclipses in all places seene when they are aboue the earth, by reason sometimes of cloudy weather, but more often, for that the globe of the earth hindereth the sight of the bending conuexitie of the heauen. Within these two hundred yeres was it found out by the witty calculation of *Hipparchus*, that the Moone sometimes was eclipsed twice in fiue moneths space, and the Sun likewise in seuen: also that the Sun and Moone twice in thirty dayes were darkned aboue the earth: howbeit seene this was not equally in all quarters, but of diuers men in diuers places: and that which maketh me to maruell most of all in this wonder, is this, that when agreed it is by all, that the Moone light is dimmed by the shadow of the earth, one while this eclipse hapneth in the West, and another while in the East: as also by what reason it hapned, that seeing after the Sunne is vp, that shadow which dusketh the light of the Moone must needs be vnder the earth; it fell out once, that the Moone was eclipsed in the West, and both planets to be seene aboue the ground in our horison: for that in twelue daies both these lights were missing, and neither Sun nor Moon were seen, it hapned in our time, when both the *Vespasians* (Emperors) were Consuls, the father the third time, and the son the second.

Chap. XIV.

¶ *Of the Moones motion.*

CLeare it is, that the Moone alwaies in her encreasing hath the tips of her hornes turned from the Sun toward the East: but in the waine contrariwise Westward. Also that she shines the first day of her apparition, $\frac{1}{4}$ parts, and the foure and twentieth part of an houre, and so riseth in proportion the second day forward, vnto the full: and likewise decreaseth in the same manner to the change. But alwaies she is hidden in the change within fourteene degrees of the Sunne. By which argument we collect, that the magnitude of the other Planets is greater than that of the Moone, for so much as they appeare otherwhiles when they be but seuen degrees off. But the cause why they shew lesse, is their altitude: like as also the fixed starres, which by reason of the brightnesse of the Sunne are not seene in the day time; whereas indeed they shine as clearely by day as by night. And that is manifestly proued by some

some eclipses of the Sun, and exceeding deepe pits, for so they are to be seene by day light. G

Chap. XV.

¶ *Generall rules touching the motions and lights of other Planets.*

THose three which we say are aboue the Sun be hidden when they goe their course together with him. They arise in the morning, and be called Orientall Matutine, and neuer depart farther than eleuen degrees. But afterwards meeting with his raies and beames, they are couered, and in their triple aspect retrograde, they make their morning station a hundred and twenty degrees off, which are called the first; and anon in a contrarie aspect or opposition, 180 degrees off, they arise in the euening, and are Occidentall Vespertine. In like sort H approching from another side within an hundred and twenty degrees, they make their euening stations, which also they call the second, vntill he ouertake them within twelue degrees, and so hide them, and these are called the euening settings. As for *Mars*, as he is neerer vnto the Sun, so feeleth he the Sun beames by a quadrant aspect, to wit ninetie degrees, whereupon that motion tooke the name, called the first and second Nonagenarie from both risings. The same planet keepeth his stationarie residence six moneths in the signes: whereas otherwise of his owne nature but two moneths. But the other planets in both stations or houses continue not all out foure moneths apiece. Now the other two inferiour planets vnder the Sun go downe and are hidden after the same manner in the euening Coniunction, and in as many degrees they make their morning rising: and from the farthest bounds of their distance they follow I the Sun, and after they haue once ouertaken him, they set againe in the morning, and so outgo him. And anon keeping the same distance, in the euening they arise againe vnto the same limits which we named before, from whence they are retrograde, and return to the Sun, and by the euening setting they be hidden. As for *Venus*, she likewise maketh two stations, according to the two manners of her apparance, morning and euening, when she is in farthest bounds and vtmost points of her Epicycle. But *Mercurie* keepeth his stations so small a while that they cannot be obserued. This is the manner and order as well of the lights and appearances of the planets, as of their occultations, and keeping close intricate in their motion, and enfolded within many strange wonders. For change they do their magnitudes and colours; sometime they approch into the North, the same againe go backe toward the South, yea, and all on a K sudden they appeare one while neerer to the earth, and another while to the heauen: wherein if we shall deliuer many points otherwise than former Writers, yet confesse we do, that for these matters we are beholden vnto them, who first made demonstration of seeking out the wayes thereto: howbeit let no man dispaire, but that hee may profit and goe forward alwaies in further knowledge from age to age. For, these strange motions fall out vpon many causes. The first is, by reason of those eccentrique circles or Epicycles in the stars, which the Greekes call *Absides*; for needs we must vse in this treatise the Greeke termes. Now euery one of the planets haue particular Auges or circles aforesaid by themselues, and these different from those of the starry heauen: for that the earth from those two points which they call Poles, is the very centre of the heauen, as also of the Zodiacke, scituate ouerthwart betweene them. All which L things are certainly knowne to be so by the compasse, that neuer can lie. And therefore for euery centre there arise their owne *Absides*, whereupon it is, that they haue diuerse circuits, and different motions, because necessarie it is, that the inward and inferiour *Absides* should be shorter.

Chap. XVI.

¶ *Why the same Planets seeme sometime higher, and some lower.*

THe highest *Absides* therefore from the centre of the earth are of *Saturne*, in the signe Scorpio: of *Iupiter*, in Virgo: of *Mars*, in Leo: of the Sun, in Gemini: of *Venus* in M Sagittarius: of *Mercury* in Capricorne: and namely in the middle or fifteenth degree of the said signes: and contrariwise the said planets in the same degrees of the opposite signes are lowest, and to the centre of the earth neerest. So it commeth to passe, that they seeme to moue more slowly when they goe their highest circuit: not for that

A that naturall motions doe either hasten or slacke, which be certaine and seuerall to euery one: but because the lines which are drawne from the top of the *Absis*, must needs grow narrow and neere together about the centre, as the spokes in cart wheeles: and the same motion by reason of the neerenesse of the centre, seemeth in one place greater, in another lesse. The other cause of their sublimities is, for that in other signes they haue the *Absides* eleuated highest from the centre of their own eccentrique circles. Thus *Saturne* is in the height of his Auge in the 20. degree of Libra, *Iupiter* in the 15. of Cancer, *Mars* in the 28. of Capricorne, the Sunne in the 29. of Aries, *Venus* in the 16. of Pisces, *Mercurie* in the 15. of Virgo, and the Moone in the 4. of Taurus. The third reason of their altitude or eleuation, is not taken from their Auges or circles accentrique, but vnderstood by the measure and connexitie of heauen, for that these planets seeme to
B the eie as they rise and fall, to mount vp or settle downward through the aire. Hereunto is knit and vnited another cause also, to wit, the Zodiaks obliquitie, & latitude of the planets, in regard of the ecliptick: For through it the starres which we called wandering, do moue and take their course. Neither is there any place inhabited vpon earth, but that which lieth vnder it. For al the rest without the poles, are fruitles, desart, and ill fauoured. Only the planet *Venus* goeth beyond the circle of the Zodiake, 2. degrees: which is supposed to be the very efficient cause, that certaine liuing creatures are ingendred and bred euen in the desart and vnhabitable parts of the world. The Moone likewise rangeth throughout all the bredth of it, but neuer goeth out of it. Next after these, the starre of *Mercurie* hath the largest scope in the Zodiake, but yet so, as of 12. degrees (for that is the bredth thereof) he wandreth but 8. and those not equally, but two in
C the midst, foure aboue, and two beneath. Then the Sunne in the midst, goeth alwaies betweene the two extremities of the Zodiake: but in his declining course from South and North, he seemeth to wind bias after the maner of Dragons or Serpents, vnequally. *Mars* in his latitude leaueth the ecliptick line foure halfe degrees, *Iupiter* two degrees and a halfe, *Saturne* no more but two, like as the Sunne. Thus you see the manner of the latitudes, as they descend Southward, or ascend Northward. And vpon this is the reason grounded also of the 2. opinion of them, who imagine that the planets do arise and mount from the earth vpward into heauen. For very many haue thought, although vntruly, that they climbe in this manner. But to the end that they may be reproued and confuted, we must lay open an infinite and incomprehensible subtiltie, & that which containeth all those causes & reasons aboue said. First therfore this is agreed on and re-
D solued, that these stars or planets in their euening setting, are neerest to the earth, both in regard of latitude, & also of altitude: and then they be called Occidentall Vespertine, when the Sun toward the euening couereth them with his raies: also, when they be farthest from the earth, as wel in latitude as eleuation, they be Oriental Matutine, & arise or appeare in the morning before the Sun is vp: as also that then they are Stationaries in their houses, which be in the middle points of the latitudes which they call eclipticks. Likewise, confessed it is, that so long as the planets are neer to the earth, their motion seemeth to encrease & be quicke: but as they depart on high, to decrease and be slow. And this reason is approued & confirmed principally by the eleuations and depressions of the Moone. As doubtles it is also, and held for an infallible rule, that euery planet being Orientall Matutine, riseth euery day higher than other. The superior
E three aboue the Sun diminish euen from their first stations vnto the second. Which being so, it will plainly appeare, that euery planet Orientall Matutine, rising before the Sun, beginns to mount the latitude Septentrionall, & decline from the Ecliptick Northward: in such sort, that from the time they begin to disnarch, their motion increases by little and little more sparely. But in the first Stations, they are at the highest altitude & ascent: for then and not before, the numbers begin to be withdrawne, & the planets to go backward, and be retrograde. Wherof a particular reason by it selfe may be giuen, in this maner: The Planets being smitten in that part wherof we spake, they are both inhibited by the triangular beames or Trine aspect of the
F sun, to hold on a straight and direct course in the longitude of heauen, and so be retrograde: and so are raised vp aloft by the firie power of the said sun. This cannot presently at the first be vnderstood by our eie sight, whereupon they are supposed to stand, and hereof their Stations took the name. Then proceedeth forward the violence of the Sun beames or aspect, and the vapour thereof by repercussion, forceth them to be euidently retrograde, and go backward. And much more is this perceiued in their euen rising, when they be Orientall Vespertine, when the Sun is wholly against them, and when they be driuen to the very top of their *Absides*, and so not seene

a

at all, becauſe they are at the higheſt, and goe their leaſt motion, which is ſo much the leſſe, G when as it hapneth in the higheſt ſignes of their Auges or *Abſides*. From the euen ariſing after the Sunne ſetting, they deſcend toward the latitude meridionall, for now the motion leſſe diminiſheth, but yet encreaſeth not before the ſecond ſtations: for that they are forced to deſcend, by reaſon of the Sun beames comming from the other ſide of their Epycicle: and the ſame force beareth them downeward againe to the earth, which by the former triangular aſpect raiſed them aloft towards heauen. So much skilleth it whether the ſaid beames came from beneath or aboue. The ſame happeneth much more in the euen ſetting, when they be hidden with the raies of the Sun. This is the reaſon of the ſuperiour planets aboue the Sunne: but the Theorique is more difficult of the reſt, and hath by no man before vs been deliuered.

H

Chap. XVII.

¶ *Generall rules as touching the Planets.*

FIrſt and formoſt therefore let vs ſet downe the cauſe why *Venus* ſtarre neuer departeth from the Sunne more than 46. degrees, and *Mercurie* not aboue 23. and (being as they are diuers Planets) why oftentimes they retyre backe vnto the Sunne within that compaſſe. For to be reſolued in this point, note we muſt, that both of them haue their *Abſides* turned oppoſite to the reſt, as being ſeated vnder the Sun: and ſo much of their circles is vnderneath, as the forenamed were aboue: and therefore farther off they cannot be, becauſe the curuature and roundle of their *Abſides* in that place hath no I greater longitude. Therefore both edges of their *Abſides*, by a like proportion keepe an indifferent meane, & their courſe is limited: but the ſhort ſpaces of the longitudes, they recompence againe with the wandring of their latitudes. But what is the reaſon that they reach not alwaies to 46. degrees, and to 23 yes ywis do they: but this the Canonicall Aſtronomers haue miſſed of in their Aphoriſmes. For it is apparent, that their *Abſides* alſo or Auges do moue, becauſe they neuer ouerpaſſe the Sunne And therefore when their edges from either ſide are perceiued to fall vpon the very point, then the planets alſo are ſuppoſed to reach vnto their longeſt diſtances: but when their edges or the points of their Epicicles be ſhort ſo many degrees, the ſtarres themſelues are thought to returne more ſpeedily in their retrogradation, than in their direct courſe forward, albeit the vtmoſt extremitie which they both haue, is euer the ſame. And from K hence is the reaſon vnderſtood of the contrary motions of theſe two planets. For the ſuperiour planets moue moſt ſwiftly in the euen ſetting, but theſe moſt ſlowly. They, I ſay, be fartheſt from the earth, when they moue ſloweſt; and theſe when they goe ſwifteſt: for as in the former the neereneſſe of the centre haſteneth them; ſo in theſe, the extremitie of the circle: they, from their morne riſing begin to ſlack their celeritie; but theſe, to encreaſe it: they returne back from their morning Station to their euening manſion; but *Venus* contrariwiſe is retrograde from the Station Veſpertine, to the Matutine. Howbeit, ſhe from the morne riſing beginneth to climbe the latitude Septentrionall: but to follow the altitude and the Sunne, from the morning ſtation; as being moſt ſwift, and at the higheſt, in the morn ſetting. Moreouer, ſhee beginnes to digreſſe in latitude, and to diminiſh her motion from the morn riſing: but, to be retrograde, and withall to L digreſſe in altitude, from the euening ſtation. Againe, the planet *Mercury*, being Oriental Matutin, begins both waies to climb, that is, to mount higher day by day; but to digreſſe in latitude, being Orientall Veſpertine: and when the Sunne hath ouertaken him within the diſtance of fifteene degrees, he ſtands ſtill for foure daies vnmoueable. Within a while he deſcenderh from his altitude daily, and goeth backe retrograde from the euen ſetting, namely, when the Sunne hideth him with his raies, to the Moone riſing, when hee appeareth before the Sunne is vp. This ſtarre onely, and the Moone, deſcend in as many daies as they aſcend. But *Venus* aſcendeth vp to her ſtation in fifteene daies and the vantage. Againe, *Saturne* and *Iupiter* are twice as long deſcending, and *Mars* foure times. See how great variety is in their nature, but the reaſon thereof is euident. For they which go againſt the vapour and heate of the Sunne do alſo hardly M deſcend. Many ſecrets more of Nature, and lawes whereunto ſhe is obedient, might be ſhewed about theſe things. As for example: The planet of *Mars*, whoſe courſe of all others can be leaſt obſerued, neuer maketh ſtation but in quadrate aſpect: as for *Iupiter*, in triangle aſpect: and very ſeldome ſeuered from the Sunne 60. degrees, which number maketh ſix angled formes of the heauen,

A heauen, that is to ſay, is the iuſt ſixth part of the heauen: neither doth *Iupiter* ſhew his riſing in the ſame ſigne this yeare, as in the former, ſaue onely in two ſignes, *Cancer* and *Leo*. The planet *Mercurie* ſeldome hath his euen riſing in *Piſces*, but very often in *Virgo*, and the morne riſing in *Libra*. In like manner, the morne riſing in *Aquarius*, but very ſeldome in *Leo*. Neither becommeth he retrograde in *Taurus* and *Gemini*: and in *Cancer*, not vnder the 25 degree. As for the Moone, ſhe entreth not twice in coniunction with the Sun in any other ſigne but in *Gemini*; and ſometime hath no coniunction at all, and that only in *Sagitarius*. As for the laſt and firſt of the Moone, to be ſeene in one and the ſelfe ſame day or night, hapneth in no other ſigne but *Aries*, and few men haue had the gift to ſee it: and hereupon came *Linceus* to be ſo famous B for his eye ſight. Alſo the planets *Saturne* and *Mars* are hidden with the Sun beames, and appeare not in the heauen at the moſt 170 dayes: *Iupiter* 36, or at leaſt ten daies wanting, *Venus* 60, or when leaſt 52. *Mercury* 31, or at leaſt 17.

Chap. XVIII.

¶ *What is the cauſe that the Planets alter their colour.*

THe reaſon of the Planets altitudes is it that tempereth their colours, according as they be neerer or farther off from the earth. For they take the likeneſſe of the aire, into the coaſts whereof they enter in their aſcent: and the circle or circumference of another Planets motion colloureth them as they paſſe either way, aſcending or deſcending. The colder C ſetteth a pale colour, the hotter a red, and the windie a fearefull and rough hue. Onely the points and coniunctions of the *Abſides*, and the vtmoſt circumferences ſhew a darke blacke. Each planet hath a ſeuerall colour: *Saturne* is white, *Iupiter* cleare and bright, *Mars* fierie and red, *Venus* Orientall (or *Lucifer*) faire, Occidentall (or *Veſper*) ſhining, *Mercury* ſparkeling his raies; the Moone pleaſant, the Sunne when he riſeth burning, afterwards glittering with his beames. Vpon theſe cauſes the ſight is intangled, and diſcouereth euen thoſe ſtars alſo which are contained and fixed in the ſky, more or leſſe. For one while a number of them appeare thicke about the halfe Moone, when in a cleare and calme night ſhe gently beautifieth them. Another while they are ſeen but here and there, inſomuch as we may wonder that they are fled D vpon the full Moone, which hideth them: or when the beams either of the Sun or other aboue ſaid haue dazled our ſight. Yea, the very Moone her ſelfe hath a feeling doubtleſſe of the Sun beames, as they come vpon her: for thoſe raies that come ſidelong, according to the conuexitie of the heauen, giue but a darke and dim light to the Moone, in compariſon of them that fall directly with ſtraight angles. And therefore in the quadrangle aſpect of the Sun ſhe appeareth diuided in halfe in the triangle ſhe is well neere inuironed, but her circle is half emptie and void, howbeit in the oppoſition ſhe ſeemeth full: and againe, as ſhe is in the waine ſhe repreſenteth the ſame formes, decreaſing by quarters as ſhe increaſed, with like aſpects as the other three planets aboue the Sun.

Chap. XIX.

E

¶ *The reaſon of the Suns motion, and the vnequalitie of daies.*

AS for the Sun himſelfe, a man may obſerue foure differences in his courſe, twice in the yeare making the night equall with the day, to wit, in the Spring and Autumne, for then he falleth iuſt vpon the entre of the earth, namely in the eight degree of *Aries* and *Libra*. Twice likewiſe exchanging the compaſſe of his race; to lengthen the day from the *Bruma* or mid-winter, in the eighth degree of Capricorne: and againe to lengthen the night from the Sommer Sunſted, being in as many degrees of *Cancer*. The cauſe of vnequall daies is the obliquitie of the Zodiake: whereas the one halfe iuſt of the world, to wit, ſix ſignes of the Zodiake, is at all times aboue and vnder the earth. But thoſe ſignes which mount vpright in their F riſing, hold light a longer tract, and make the daies longer: whereas they which ariſe crooked and gobyas paſſe away in ſhorter and ſwifter time.

CHAP.

Chap. XX.

¶ *Why lightnings are attributed to Iupiter.*

MOst men are ignorant of that secret, which by great attendance vpon the heauens, deepe Clerkes and principall men of learning haue found out: namely, that they be the fires of the three vppermost planets, which falling to the earth carry the name of lightnings: but those especially which are seated in the midst, to wit, about *Iupiter*, haply because participating the excessiue cold and moisture from the vpper circle of *Saturne*, and the immoderate heate from *Mars* that is next vnder, by this meanes he discharged the superfluitie, and hereupon it is commonly said, that *Iupiter* shooteth and darteth lightnings. Therefore, as out of a burning piece of wood a cole of fire flieth forth with a cracke; euen so from a star is spit out as it were and voided forth this celestiall fire, carrying with it presages of future things: so as the heauen sheweth diuine operations euen in these parcels and portions which are reiected and cast away as superfluous. And this most commonly hapneth when the aire is troubled, either because the moisture that is gathered moueth and stirreth forward that abundance to fall; or else for that it is disquieted with the birth (as it were) proceeding from a great bellied starre, and therefore would be discharged of such excrements.

Chap. XXI.

¶ *The distances of the Planets.*

MAny haue essaied to finde out the distance and eleuation of the planets from the earth, and haue set downe in writing, that the Sun is distant from the Moon 18 degrees, euen much as the Moone from the earth. But *Pythagoras*, a man of a quicke spirit, hath collected, that there are 126000 furlongs from the earth to the Moone, and a duple distance from her to the Sun, and so from thence to the twelue signes three times so much. Of which opinion was also our countreyman *Gallus Sulpitius*.

Chap. XXII.

¶ *Of the Planets musicke and harmonie.*

BVt *Pythagoras* otherwhiles vsing the termes of Musicke, calleth the space betweene the earth and the Moone a Tonus, saying, that from her to *Mercurie* is halfe a tone, and from him to *Venus* in manner the same space. But from her to the Sun as much and half again: but from the Sunne to *Mars* a Tonus, that is to say, as much as from the earth to the Moone. From him to *Iupiter* halfe a Tonus: likewise from him to *Saturne* halfe a Tonus: and so from thence to the signifer Sphere or Zodiacke, so much and halfe againe. Thus are composed seuen tunes, which harmonie they call Diapason, that is to say, the Generalitie, or whole state of consent and concord, which is perfect musicke. In which, *Saturne* moueth by the Dorick tune: *Mercury* by Phthongus; *Iupiter* by the Phrygian; and the rest likewise. A subtilty more pleasant ywis than needfull.

Chap. XXIII.

¶ *The Geometry or dimension of the world.*

A Stadium or Furlong maketh of our paces an hundred twentie and fiue, that is to say, six hundred twenty and fiue foot. *Posidonius* saith, That from the earth it is no lesse than forty stadia, to that height or altitude wherein thicke weather, windes, and clouds doe engender. Aboue which, the aire is pure, cleare, and light, without any troubled darkenesse. But from the cloudy and muddy region to the Moone is 2000000 stadia: from thence to the Sun fiue thousand. By means of which middle space betweene it commeth to passe, that so exceeding great as the Sun is, he burneth not the earth. Many there be moreouer, who haue taught, that the clouds are eleuated to the hight of nine hundred stadia. Vnknown these points are,

are, and such as men cannot wind themselues out of: but as well may they now be deliuered to others, as they haue bin taught to vs: in which notwithstanding, one infallible reason of a Geometricall collection which neuer lieth, cannot be reiected, if a man will search deep into these matters. Neither need a man to seeke a iust measure hereof; for to desire that, were in maner a point of fond and foolish idlenesse, as if men had nothing else to do, but onely to make an estimate, and resolue vpon a guesse and coniecture therof. For, whereas it is plaine and apparent by the course of the Sunne, that the circle through which he passeth, doth containe three hundred threescore, and almost six degrees: and alwaies the dimetrent line, or diameter, taketh a third part of the circumference, and little lesse than a seuenth part of a 3. it is plain, that deducting one halfe thereof (by reason that the earth scituate as a centre, commeth betweene) the sixt part well neere of this great circuit which he makes about the earth (so farre as our mind doth comprehend) is the very height from the earth vp to the Sunne, but the twelfth part to the Moone, because she runneth so much a shorter compasse than the Sun: whereby it appeareth, that she is in the middest betweene the earth and the Sun. A wonder it is to see how farre the presumpteous minde and heart of man will proceed, and namely being inuited and drawne on by some little successe, as in the aboue named matter. The reason whereof minister plenteous occasion of impudencie, for they who dared once to giue a guesse at the space betweene the Sun and the earth, are so bold to do the like from thence to heauen. For presuming, that the Sunne is in the middest, they haue at their fingers ends by and by the very measure also of the whole world. For look how many seuen parts the dimetrent hath, so many 22. parts or thereabout hath the whole circle: as if they had gotten the just and certain measure of the heauen by leuel, and the plumb or perpendicular line. The Ægyptians according to the reckoning which *Petosiris* and *Necepsos* haue inuented, do collect, That euery degree in the circle of the Moone, which is the least (as hath been said) of all other, containeth 33. stadia, and somewhat more: in *Saturne*, the greatest of all the rest, duple so much: and in the Sunne, which we said was the middest, the halfe of both measures. And this computation hath very great importance, for he that will reckon the distances betweene the circle of *Saturne* and the Zodiake, by this calculation shall multiplie an infinite number of Stadia.

Chap. XXIIII. ¶ *Of sudden Starres.*

THere remaine yet some few points as touching the world: for in the very heauen there be Starres that suddenly arise and appeare, whereof be many kindes.

Chap. XXV.

¶ *Of Comets or blazing starres, and celestiall prodigies, their nature, situation, and diuers sorts.*

THese blasing starres the Greekes call *Cometæ*, our Romanes *Crinitas*: dreadfull to be seene, with bloudy haires, and all ouer rough and shagged in the top like the bush of haire vpon the head. The same Greekes call those starres *Pogonias*, which from the nether part haue a maine hanging downe, in fashion of a long beard. As for those named *Acontiæ*, they brandish and shake like a speare or dart, signifying great swiftnesse. This was it, whereof *Tiberius Cæsar* the Emperour wrot an excellent Poeme in his fift Consulship, the last that euer was seen to this day. The same, if they be shorter and sharpe pointed in the top, they vse to call *Xiphiæ*: and of all other paleest they be, and glitter like a sword, but without any reies or beames: which another kind of them, named *Discous* (resembling a dish or coit, whereof it beareth the name, but in colour like to amber) putteth forth here and there out of the brimmes and edges thereof. As for *Pitheus*, it is seene in forme of tunnes, enuironed within a smokie light, as if it were a concauitie. *Ceratias* resembleth an horne: and such a one appeared when the whole manhood of Greece fought the battell of Salamis. *Lampadias* is like to burning torches: and *Hippeus* to horse maines, most swift in motion, & turning round. There is also a white Comet with siluer haires, so bright and shining, that hardly a man can endure to looke vpon it, and in mans shape it sheweth the very image of a god. Moreouer, there be blazing starres that become all shaggie, compassed round with haitie fringe, and a kind of maine. One heretofore appearing in the forme of a main, chan-

ged into a speare, namely in the 108 Olympia's, and the 398 yeare from the foundation of Rome. Noted it hath bin, that the shortest time of their appearance is a seuen-night, and the longest eighty daies: some of them moue like the wandering planets; others are fixed fast, and stir not. All in maner are seen vnder the very North star called *Charlemaignes* Wain: some in no certain part thereof, but especially in that white, which hath taken the name of the * Milk circle. *Aristotle* saith that many are seene together, a thing that no man else hath found out, so far as I can learne. Mary, boisterous windes and much heate of weather are foretokened by them. There are of them seene also in Winter season, and about the Antarticke South pole; but in that place without any beames. A terrible one likewise was seene of the people in Ethiopia and Egypt, which the King who reigned in that age named Typhon. It resembled fire, and was pleited and twisted in manner of a wreath, grim and hideous to be looked on, and no more truly to be counted a star than some knot of fire. Sometimes it falleth out, that the planets and other stars are bespred all ouer with haires: but a Comet lightly is neuer seen in the west part of the heauen.

* Galaxi.

Typhon.

A fearefull star for the most part this Comet is, and not easily expiated; as it appeared by the late ciuill troubles when *Octauius* was Consul: as also a second time, by the intestine war of *Pompey* and *Cæsar*. And in our dayes about the time that *Claudius Cæsar* was poysoned, and left the Empire to *Domitius Nero*, in the time of whose reigne and gouernment there was another in manner continually seen, and euer terrible. Men hold opinion, that it is materiall for presage to obserue into what quarters it shooteth, or what stars power and influence it receiueth: also what similitudes it resembleth, and in what parts it shineth out and first ariseth For if it be like vnto flutes or hautboies it portendeth somewhat to Musitians: if it appeare in the priuy parts of any signe, then let ruffians, whore-masters, and such filthy persons take heed. It is respective to fine wits, and learned men, if it put forth a triangular or foure-square figure, with euen angles, to any scituations of the perpetuall fixed stars. And it it is thought to presage, yea to sprinkle and put forth poison, if seen in the head of the Dragon either North or South.

In one only place of the whole world, namely in a Temple at Rome, a Comet is worshipped and adored, euen that which by *Augustus Cæsar* himselfe, of happy memorie, was iudged verie lucky and happy to him; who when it began to appeare, gaue attendance in person, as ouerseer of those playes and games which he made to *Venus genetrix*, not long after the death of his father *Cæsar*, in the colledge by him instituted and erected: testifying his ioy in these words, *In those very daies during the solemnities of my Plaies, there was seen a blasing star for seuen daies together, in that region of the sky which is vnder the North star* Septentriones. *It arose about the* 11 *houre of the day, bright it was and cleare, and euidently seene in all lands: by that star it was signified, as the common sort beleeued, that the soule of* (Iulius) Cæsar *was receiued among the diuine powers of the immortal gods. In which regard, that marke or ensigne of a star was set to the head of that statue of* Iulius Cæsar, *which soone after we dedicated in the Forum Romanum.* These words published he abroad: but in a more inward ioy, to himselfe he interpreted and conceiued thus of the thing, That this Comet was made for him, and that himselfe was in it borne. And verily, if we wil confesse a truth, a healthfull, good, and happy presage that was to the whole world. Some there be who beleeue, that these be perpetuall stars, and go their course round, but are not seen vnlesse they be left by the Sun. Others againe are of opinion, that they are ingendred casually by some humour, and the power of fire together, and thereby do melt away and consume.

Chap. XXVI.

¶ Hipparchus his opinion of the Stars. Also historicall examples of Torches, Lamps, Beames, Fiery Darts, opening of the Firmiment, and other such impressions.

HIppachus the foresaid Philosopher (a man neuer sufficiently praised, as who proued the affinitie of stars with men, and none more than he; affirming also that our soules were parcell of heauen) found out and obserued another new star ingendred in his time, and by the motion thereof on what day it first shone, he grew presently into a doubt, Whether it hapned not very often that new stars should arise; and whether those starres also moued not, which we imagined to be fixed. The same man went so farre, that he attempted (a thing euen hard

A hard for God to performe, to deliuer to posteritie the iust number of starres. He brought the same stars within the compasse of rule and art, deuising certaine instruments to take their seueral places, and set out their magnitudes: that thereby it might be easily discerned, not only whether the old died, and new were borne, but also whether they moued, and which way they tooke their course, likewise whether they increased or decreased. Thus he left the inheritance of heauen vnto all men, if haply any one could be found able to enter vpon it as lawfull heire.

There be also certaine flaming torches shining out in the sky, howbeit neuer seene but when they fall. Such a one was that which at the time that *Germ. Cæsar* exhibited a shew of Sword-fencers at vtterance, ran at noontide in sight of all the people. And two sorts there be of them, namely *Lampades*, which they call plaine torches; and *Bolides*, *i.* Lances, such as the Mutinians saw in their calamitie when their city was sacked. Herein they differ, for that those lampes or torches make long traines, whiles the forepart only is on a light fire: but *Bolis* burnes all ouer, and draweth a longer taile. There appeare and shine out after the same manner certain beams, which the Greekes call *Docus*: like as when the Lacedemonians being vanquished at sea, lost the empire and dominion of Greece. The firmament also is seene to chinke and open, and this they name *Chasma*.

B

Lampades.

Bolides.

Docus.

Chasma.

Chap. xxvij.

¶ Of the strange colours of the Sky.

C THere appeareth in the Sky also a resemblance of bloud, and (than which nothing is more dread and feared of men) a fiery impression, falling from out of heauen to earth; like as it hapned in the 3 yeare of the 107 Olympias, at what time King *Philip* made all Greece to shake with fire and sword. And these things verily I suppose to come at certaine times by course of nature, like as other things, and not as the most part thinke, of fundry causes, which the subtill wit and head of man is able to deuise. They haue indeed been fore-runners of exceeding great miseries; but I suppose those calamities hapned not because these impressions were, but these therefore were procreated to foretell the accidents that ensued afterward. Now for that they fall out so seldome, the reason thereof is hidden and secret, and so not knowne, as the rising of planets aboue said, the eclipses, and many other things.

D

Chap. xxviij. ¶ *Of the Heauen flame.*

LIkewise there are seen stars together with the Sun all day long; yea, and very often about the compasse of the Sun other flames, like vnto garlands of corne eares; also circles of sundry colours, such as those were when *Augustus Cæsar* in the prime of his youth entered the city of Rome after the decease of his father, to take vpon him his great name and imperial title.

Chap. xxix. ¶ *Of Cœlestiall Crownes.*

E ALso the same garlands appeare about the Moone and other goodly bright stars which are fixed in the firmament. Round about the Sun there was seene an arch, when *Lu. Opimius* and *Q. Fabius* were Consuls: as also a round circle, when *L. Porcius* and *M. Acilius* were Consuls.

Chap. xxx. ¶ *Of sudden Circles.*

THere appeared a circle of red colour when *L. Iulius* and *P. Rutilius* were Consuls. Moreouer, there are strange eclipses of the Sunne, continuing longer than ordinarie; as namely when *Cæsar* Dictator was murthered. Moreouer, in the wars of *Antony* the Sun continued almost a whole yeare of a pale wan colour.

F

Chap. xxxj. ¶ *Many Suns.*

OVer and besides, many Suns are seene at once, neither aboue nor beneath the bodie of the true Sunne indeed, but crosse-wise, and ouerthwart: neuer neere nor directly against the earth, neither in the night season, but when the Sun either riseth or setteth. Once they

they are reported to haue beene seene at noone day in Bosphorus, and continued from morne G
to euen. Three Suns together our Ancestors in old time haue often beheld, as namely when *Sp. Posthumus*, with *Q. Mutius*, *Q. Martius*, with *M. Porcius*, *M. Antonius*, with *P. Dolabella*, and *Mar. Lepidus*, with *L. Plancus*, were Consuls. Yea, and we in our daies haue seene the like, when *Cl. Cæsar* (of famous memorie) was Consul, together with *Cornelius Orfitus* his Colleague. More than three we neuer to this day finde to haue been seene together.

CHAP. XXXII. ¶ *Many Moones.*

THree Moones also appeared at once, and namely when *Cn. Domitius* and *C. Fannius* were Consuls, which most men called Night Sunnes. H

CHAP. XXXIII. ¶ *Day light in the Night.*

OVt of the Firmament by night there was seen a light, when *C. Cælius* and *Cn. Papyrius* were Consuls, yea and oftentimes besides, so as the night seemed as light as the day.

CHAP. XXXIV. ¶ *Burning Shields or Targuets.*

A Burning shield ran sparkling from the West to the East, at the Suns setting, when *L. Valerius* and *C. Marius* were Consuls.

CHAP. XXXV. ¶ *A strange sight in the Sky.*

BY report there was once seene, and neuer but once, when *Cn. Octauius* and *C. Scribonius* were I
Consuls, a sparkle to fall from a star: and as it approched the earth, it waxed greater; and after it came to the bigneſſe of the Moone it shined out and gaue light, as in a cloudy and darke day: then being retyred againe into the sky, it became, to mens thinking, a burning Lampe. This, *Licinius Syllanus* the Proconsull saw, together with his whole traine.

CHAP. XXXVI. ¶ *The running of Stars to and fro in the Sky.*

SEene there be also Stars to shoot hither and thither, but neuer for nought and to no purpose: for, from the same quarter where they appeare, there rise terrible windes, and after them stormes and tempests both by sea and land. K

CHAP. XXXVij. ¶ *Of the Stars called Castor and Pollux.*

I Haue seene my selfe in the campe, from the soldiers sentinels in the night watch, the resemblance of lightning to sticke fast vpon the speares and pikes set before the rampier. They settle also vpon the crosse Saile yards and other parts of the ship, as men do saile in the sea, making a kinde of vocall sound, leaping to and fro, and shifting their places as birds do which fly from bough to bough. Dangerous they be and vnlucky when they come one by one without a companion; and they drowne those ships on which they light, and threaten shipwrack, yea, and they set them on fire if haply they fall vpon the bottome of the keele. But if they appeare two and two together, they bring comfort with them, and foretell a prosperous course in the voiage, as by whose comming, they say, that dreadfull, cursed, and threatning meteor called Helena is chased and driuen away. And hereupon it is that men assigne this mighty power to *Castor* and *Pollux*, and inuocate them at sea no lesse than gods. Mens heads also in the euen tyde are seene many times to shine round about, and to be of a light fire, which presageth some great matter. Of all these things there is no certain reason to be giuen, but secret these be, hidden with the maiestie of Nature, and reserued within her cabinet. L

CHAP. XXXViij. ¶ *Of the Aire.*

IT remaineth now (thus much and thus far being spoken of the world it selfe) to wit, the starry heauen and the planets) to speake of other memorable things obserued in the Skie. For euen that part also hath our forefathers called *Cælum*, (*i.*) the Skie, which otherwise they M
name aire: euen all that portion of the whole, which seeming like a void and empty place, yeeldeth this vitall spirit whereby all things do liue. This region is seated beneath the Moone, and farre vnder that Planet (as I obserue it is in a manner by euery man agreed vpon.) And mingling together an infinite portion of the superiour cœlestiall nature or elementarie fire, with

A with an huge deale likewise of earthly vapours, it doth participate confusedly of both. From hence proceed clouds, thunders, and those terrible lightenings. From hence come haile, frosts, shoures of raine, stormes and whirlewindes: from hence arise the most calamities of mortall men, and the continuall warre that nature maketh with her owne selfe. For these grosse exhalations as they mount vpward to the heauen, are beaten backe and driuen downeward by the violence of the starres: and the same againe when they lift, draw vp to them those matters, which of their owne accord ascend not. For thus we see, that shoures of raine do fall, foggie mists and light clouds arise, riuers are dried vp, haile stormes come downe amaine, the Sunne beames doe scorch and burne the ground, yea, and driue it euery where to the middle centre: but the same againe vnbroken, and not losing their force, rebound backe and take vp with them whatsoeuer
B they haue drunke vp and drawne. Vapours fall from aloft, and the same returne againe on high: winds blow forcibly, and come emptie, but backe they goe with a bootie, and carry away euery thing before them. So many liuing creatures take their wind and draw breath from aboue: but the same laboureth contrariwise, and the earth insuseth into the aire a spirit and breath, as if it were cleane void and empty. Thus whiles the Nature goes too and fro, as forced by some engin, by the swiftnesse of the heauen, the fire of discord is kindled and groweth hot. Neither may she abide by it, and stand to the fight, but being continually carried away, she rolleth vp and down: and as about the earth shee spreadeth and pitcheth her tents, as it were, with an vnmeasurable globe of the heauen, so euer and anon of the clouds she frameth another skie. And this is that region where the winds raigne. And therefore their kingdome principally is there to be seene,
C where they execute their forces, and are the cause well neere of all other troubles in the aire. For thunderbolts and flashing lightenings most men attribute to their violence. Nay, more than that, therefore it is supposed that otherwhiles it raineth stones, because they were taken vp first by the winde: so as we may conclude, that they cause many like impressions in the aire. Wherefore many matters besides are to be treated of together.

CHAP. XXXIX. ¶ *Of ordinary and set seasons.*

D IT is manifest, that of times and seasons, as also of other things, some causes be certaine; others, casuall and by chance; or, such as yet the reason thereof is vnknowne. For who need to doubt, that Summers and Winters, and those alternatiue seasons which we obserue by yearely course, are occasioned by the motion of the Planets. As therefore the Sunnes nature is vnderstood by tempering and ordering the yeare: so the rest of the starres and planets also haue euery one their proper and peculiar power, and the same effectuall to shew and performe their owne nature. Some are fruitfull to bring forth moisture, that is turned into liquid raine: others to yeeld an humour either congealed into frosts, or gathered and thickened into snow, or else frozen and hardened into haile: some afford winds: others warmth: some hot and scorching vapours: some, dewes: and others, cold. Neither yet ought these starres to be esteemed so little as they shew in sight, seeing that none of them is lesse than the Moone, as may appeare by the reason of their exceeding height. Well then, euery one in their own motion, exercise their seuerall
E natures: which appeareth manifestly by *Saturne* especially, who setteth open the gates for raine and shoures to passe. And not onely the seuen wandering starres be of this power, but many of them also that are fixed in the firmament; so often as they be either driuen by the exceesse and approch of those planets, or pricked and prouoked by the casting and influence of their beames; like as we find it happeneth in the seuen stars called *Sucula*, which the Grecians of raine name *Hyades*, because they euer bring foule weather. Howbeit some, of their owne nature, and at certaine set times do cause raine; as the rising of the Kids. As for *Arcturus*, he neuer lightly appeareth without some tempestuous and stormie haile.

CHAP. XL. ¶ *The power of the Dog-starre.*

F WHo knoweth not, that when the Dogge-starre ariseth, the heate of the Sunne is fiery and burning? the effects of which starre are felt exceeding much vpon the earth. The seas at his rising do rage and take on, the wines in sellars are troubled, pooles also and standing waters doe stirre and moue. A wilde beast there is in Ægypt, called *Orix*, which the Ægyptians say doth stand full against the Dog-starre when it riseth, looking

looking wistly vpon it, and testifieth after a sort by sneezing, a kind of worship. As for dogs, no man doubteth verily, but all the time of the canicular daies they are most ready to run mad. G

Chap. XLII.

¶ That the starres haue their seuerall influences in sundry parts of the signes, and at diuers times.

MOreouer, the parts of certaine signes haue their peculiar force, as appeareth in the Equinoctiall of Autumne, and in mid-winter; at what time we perceiue, that the Sun maketh tempests. And this is proued, not onely by raines and stormes, but by many experiments in mens bodies, and accidents to plants in the countrey. For some men are stricken by the Planet, and blasted: others are troubled and diseased at certaine times ordinarily, in their belly, sinewes, head, and minde. The Oliue tree, the Aspe or white Poplar, and Willowes, turne or wryth their leaues about at Mid-summer, when the Sun entreth Cancer. And contrariwise, in very Mid-winter, when he entreth Capricorne, the herbe Penyroiall floureth fresh, euen as it hangs within house, drie and ready to wither. At which time all parchments & such like bladders or skinnes are so pent and stretched with spirit and wind, that they burst withall. A man might marueil hereat, who marketh not by daily experience, that one herbe called * *Heliotropium*, regardeth and looketh toward the Sun euer as he goeth, turning with him at all houres, notwithstanding he be shadowed vnder a cloud. Now certaine it is, that the bodies of Oysters, Muskles, Cockles, and all shell fishes, grow by the power of the Moone, and thereby againe diminish: yea, and some haue found out by diligent search into Natures secrets, that the fibres or filaments in the liuers of rats and mice, answer in number to the daies of the Moones age: also that the least creature of all others, the Pismire, feeleth the power of this Planet, and alwaies in the change of the Moone ceaseth from worke. Certes, the more shame it is for man to be ignorant and vnskilfull, especially seeing that he must confesse, that some labouring beasts haue certaine diseases in their eyes, which with the Moone do grow and decay. Howbeit the excessiue greatnesse of the heauen and exceeding height thereof, diuided as it is into 72 signes, maketh for him, and serueth for his excuse. Now these signes are the resemblances of things or liuing creatures, into which the skilfull Astronomers haue with good respect digested the firmament. For example sake, in the taile of Taurus there be seuen, which they named in old time *Vergiliæ*; in the forehead other seuen called *Suculæ*; and *Boötes*, who followeth after the wain or great Beare *Septentriones*. H I K

* Some take it for Rudes or Wert-wort: others for Turn-sol, or the Marygold.

Chap. XLII.

¶ The causes of raine, showers, winds, and cloudes.

ICannot denie but without these causes there arise raines and windes: for that certaine it is, how there is sent forth from the earth a mist sometimes moist, otherwhiles smokie, by reason of hot vapours and exhalations. Also that clouds are ingendered by vapours which are gone vp on high, or else of the aire gathered into a waterie liquour: that they be thicke, grosse, and of a bodily consistence, wee guesse and collect by no doubtful argument, considering that they ouer-shadow the Sun, which otherwise may be seene through the water, as they know well that dliue to any depth whatsoeuer. L

Chap. XLIII.

¶ Of Thunder and Lightening. M

DEnie I would not therefore, but that the fierie impressions from starres aboue may fall vpon these clouds, such as we oftentimes see to shoot in cleare and faire weather: by the forceble stroke whereof, good reason it is, that the aire should be mightily shaken, seeing that arrowes and darts when they are discharged, sing and keepe a noise as they flie. But when they incounter a cloud, there ariseth a vapor with a dissonant sound (like as when a red hot yron maketh

A keth an hissing being thrust into water) & a smokie fume walmeth vp with many turnings like waues. Hereupon stormes do breed. And if this flatuositie or vapour doe struggle and wrestle within the cloud, from thence it commeth that thunderclaps be heard; but if it breake through still burning, then flieth out the thunderbolt: if it be longer time a strugling, and cannot pierce through, then leams and flashes are seene. With these, the cloud is clouen; with the other, burst in sunder. Moreouer, thunders are nothing els but the blows and thumps giuen by the fires beating hard vpon the clouds: and therefore presently the firy chinkes and rifts of those clouds do glitter and shine. Possible it is also, that the breath and winde eleuated from the earth, being repelled back, and kept downe by the starres, & so held in and restrained within a cloud, may thunder, whiles Nature choketh the rumbling sound, all the while it striueth and quarelleth; but sendeth forth a crack when it breaketh out, as we see in a bladder puffed vp with winde. Likewise it may be, that the same wind or spirit whatsoeuer, is set on fire by fretting and rubbing, as it violently passeth headlong downe. It may also be stricken by the conflict of two clouds, as if two stones hit one against another; and so the leams and flashes sparkle forth, so as all these accidents happen by chance-medley, and be irregular. And hereupon come those bruitish & vain lightenings, such as haue no natural reason, but are occasioned by these impressions abouesaid. With these are mountains and seas smitten: and of this kind be all other blasts and bolts that do no hurt to liuing creatures. As for those that come from aboue, and of ordinary causes, yea, and from their proper starres, they alwaies presage and foretell future euents. In like manner as touching the windes, or rather blasts, I would not denie but that they may proceed from a dry exhalation of the earth, void of all moisture: neither is it impossible, but that they do arise out of waters, breathing and sending out an aire, which neither can thicken into a mist, nor gather into clouds: also they may be driuen by the lugitation and impulsion of the Sun, because the winde is conceiued to be nought els but the fluctuation and waiuing of the aire, and that by many means also: for some we see to rise out of riuers, firths, and seas, euen when they be stil and calme: as also others out of the earth, which winds they name *Altani*. And those verily when they come backe againe from the sea, are called *Tropæi*: if they go onward, *Apogæi*. B C D

Chap. XLIIII.

¶ What is the reason of the resounding and doubling of the Eccho.

BVt the windings of hils, and their often turnings, their many tops, their crests and ridges also bending like an elbow or broken, and arched as it were into shoulders, together with the hollow noukes of vallies, do cut vnequally the aire that reboundeth them fro: which is the cause of reciprocall voices called Ecchoes, answering one another in many places, when a man doth holla or houpe among them.

Chap. XLV.

¶ Of Windes againe. E

NOw there be certaine caues and holes which breed windes continually without end: like as that is one which we see in the edge of Dalmatia, with a wide mouth gaping, & leading to a deep downfall: into which if you cast any matter of light weight, be the day neuer so calm otherwise, there ariseth presently a stormie tempest like a whirle puffe. The places name is Senta. Moreouer, in the prouince Cyrenaica there is reported to be a rock consecrated to the South-wind, which without prophanation may not be touched with mans hand; but if it be, presently the South wind doth arise and cast vp heaps of sand. Also in many houses there be hollow places deuised & made by mans hand for receipt of wind, which being inclosed with shade and darknesse, gather their blasts. Whereby we may see how all winds haue one cause or other. But great difference there is betweene such blasts and winds. As for these, they be setled and ordinarie, continually blowing, which, not some smal tracts & particular places, but whole lands do feele; which are not light gales nor stormy puffes, named *Aurææ* and *Procellæ*, but simply called winds, by the Masculine name *Venti*: which whether they arise by the continuall motion of the heauen, and the contrary course of the Planets; or whether this winde be that spirit of Nature that engendreth all things, wandering to and fro as it were in some wombe; or rather

the aire beaten and driuen by the vnlike influences and raies of the straying starres or planets, G
and the multiplicitie of their beames: or whether all winds come from their owne starres, namely these planets neerer at hand, or rather fall from them that be fixed in the firmament. Plaine and euident it is, that guided they by an ordinary law of Nature, not altogether vnknowne, although it be not yet throughly knowne.

Chap. XLVI.

¶ The Natures and obseruations of the Windes.

THe old Greeke writers, not so few as twentie, haue set downe and recorded their obseruations of the Winds. I marueil so much the more, that the World be- H
ing so at discord, and diuided into kingdomes, that is to say, dismembred as it was, so many men haue had care to seek after these things, so intricate and hard to be found out, and namely in time of wars, and amid those places where was no safe lodging nor abode, and especially when pyrats and rouers, common enemies to mankinde, held welneere all passages: I marueil, I say, that at this day each man in his owne tract and countrey taketh more light and true knowledge of some things by their commentaries and bookes, who neuer set foot there, than they doe by the skill and information of home-born inhabitants; whereas now in time of so blessed and ioious peace, and vnder a prince who taketh such delight in the progresse of the State and of all good arts, no new thing is learned by further inquisition, nay, nor so much as the inuentions of old writers are throughly vn- I
derstood. And verily it cannot be said, that greater rewards were in those daies giuen, considering that the bountie of Fortune was dispersed, and put into many mens hands: and in truth most of these deepe Clerkes and learned men, fought out these secrets for no other reward or regard, than to doe good vnto posteritie. But now, mens manners are waxen old and decay; now, all good customes are in the waine: and notwithstanding that the fruit of learning be as great as euer it was, and the recompences as liberall, yet men are become idle in this behalfe. The seas are open to all, an infinite multitude of saylers haue discouered all coasts whatsoeuer, they saile through and arriue familiarly at euery shore: all for gaine and lucre, but none for knowledge and cunning. Their mindes altogether blinded, and bent vpon nothing but couetousnesse, neuer consider that the same might with more safetie be performed by skill and K
learning. And therfore seeing there be so many thousand poore sailers that hazard themselues on the seas, I will treat of the winds more curiously and exquisitly than perhaps beseemes the present worke that is begun.

Chap. XLVII.

¶ Many sorts of Windes.

MEn in old time obserued foure Windes only, according to so many quarters of the world (and therefore *Homer* nameth no more:) a blockish reason this was, as soone after it was iudged. The Age ensuing added eight more; and they were on the o- L
ther side in their conceit too subtill and concise. The Modern sailers of late daies found out a meane betweene both: and they put vnto that short number of the first, foure windes and no more, which they tooke out of the later. Therefore euery quarter of the Heauen hath two windes apiece. From the equinoctiall Sunne-rising bloweth the East-winde *Sub-solanus*: from the rising thereof in the Mid-winter, the South-east *Vulturnus*. The former of these twaine the Greekes call *Apeliotes*, and the later *Eurus*. From the Mid-day, riseth the South winde: and from the Sun-setting in Mid-winter the South-west, *Africus*. They also name these two, *Notus* and *Libs*. From the Equinoctiall going down of the Sun, the West winde *Fauonius* commeth: but from that in Summer season, the North-west *Corus*. And by M
the same Greekes they are termed *Zephyrus* and *Argestes*. From the North waine or pole Arctique, bloweth the North winde *Septentrio*: betweene which and the Sun-rising in Summer, is the North-east winde *Aquilo*, named *Aparctias* and *Boreas* by the Greekes. A greater reckoning than this for number, is brought in by some, who haue thrust in foure more betweene; namely, *Thracias* betweene the North and the Summer setting of the Sunne; in like manner

Caecias

A *Caecias* in the midst betweene the North-east *Aquilo*, and that of the Sun rising in the Equinoctiall *Sub-solanus*. Also, after the Sun-rising in Sommer, *Phoenicias* in the middest, betweene the South-east and the South. Last of all, betweene the South and the South-west, *Lybonotus*, iust in the middest, compounded of them both, namely, betweene the Noone-stead, and the Sunsetting in Winter. But here they could not lay a straw, and see to make an end. For others haue set one more yet called *Mese*, betweene the North-east winde *Boreas* and *Caecias*: also *Euronotus* betweene the South and the Southwest winds. Besides all these, there be some winds appropriate and peculiar to euery nation, which passe not beyond one certaine tract and region: as namely *Scyros* among the Athenians, declining a little from *Argestes* a winde vnknowne to other parts
B of Greece. In some other place it is more aloft, and the same then is called *Olympias*, as comming from the high hill Olimpus. But the vsuall and customable manner of speech vnderstandeth by all these names *Argestes* only. Some call *Caecias*, by the name of *Hellespontias*, and giue the same winds in sundry places diuers names. In the prouince likewise of Narbone, the most notorious winde is *Circius*, and for violence inferiour to none, driuing directly before it very often, the current at Ostia, into the Ligurian sea. The same wind is not only vnknown in all other climats of the heauen, but reacheth not so much as to Vienna, a citie in the same prouince. A
C great & boisterous a wind as he is otherwise, yet a restraint he hath before he come thither, and is kept within few bounds by the opposition of a meane and small hill. *Fabianus* also auouches, that the South winds enter not so far as into Ægypt. Whereby, the law of Nature sheweth it selfe plainely, that euen windes haue their times and limits appointed.

To proceed then; the Spring openeth the sea for sailers: in the beginning whereof, the West winds mitigate the Winter weather, at what time as the Sun is in the 25 degree of Aquarius, and that is the fixt day before the Ides of February. And this order holdeth in manner with all other winds, that I will set downe one after another; so that in euery leape yeare ye anticipate and reckon one day sooner, and then againe keep the same rule throughout all the foure yeares following. Some call *Fauonius* (which beginneth to blow about the 7 day before the Calends of March) by the name of *Chelidonius*, vpon the sight of the first Swallows, but many name it *Ouinthias*, comming the 71 day after the shortest day in winter, by occasion of the comming of
D birds: which wind bloweth for nine dayes. Opposite vnto *Fauonius* is the VVind which we called *Sub-solanus*. Vnto this VVind is attributed the rising of the *Vergilia* or seuen stars, in as many degrees of Taurus, six daies before the Ides of May; which time is a southerly constitution: and to this Winde the North is contrarie. Moreouer, in the hottest season of the Sommer, the Dog-star ariseth, at what time as the Sun entreth into the first degree of Leo, which commonly is the 15 day before the Calends of August. Before the rising of this star for eight daies space or thereabout, the Northeast winds are aloft, which the Greekes call *Prodromi*, i. forerunners. And two daies after it is risen, the same winds hold still more stiffely, and blow for the space of fortie daies, which they name *Etesiæ*. The Suns heate redoubled by the hotnesse of that star, is thought to be asswaged by them: and no winds are more constant, nor keep their set times better than they. Next after them come the Southerne winds againe, which are vsually vp, vntill
E the star *Arcturus* riseth, and that is nine daies before the Æquinoctiall in Autumne. With it entereth *Corus*, and thus *Corus* beginneth the Autumne. And to this *Vulturnus* is contrarie. After that Æquinoctiall, about 44 daies the *Virgilias* go downe, and begin winter, which season vsually falleth vpon the third day before the Ides of November. This is the winter Northeast wind, which is far vnlike to that in Sommer, opposit and contrary to *Africus*. Now, a seuen night before the Mid-winter day, and as much after, the sea is allaied and calme for the sitting and hatching of the birds Halciones, whereupon these daies tooke the name *Alcionis*: the time behind, plaieth the part of Winter. And yet these boisterous seasons full of tempests, shut not vp the sea: for pyrats and rouers at the first forced men with present perill of death, to run headlong vpon their death, and to hazard themselues in Winter seas; but now a daies couetousnesse causeth men to do the like.

F The coldest winds of all other, be those which we said to blow from the North-pole, and together with them their neighbor, *Corus*. These winds do both allay and still all others, and also scatter and driue away clouds. Moist winds are *Africus*, and especially the South wind of Italy called *Auster*. Men report also, that *Caecias* in Pontus gathereth & draweth to it selfe clouds. *Corus* and *Vulturnus* are dry, but onely in the end when they giue ouer. The Northeast and the

North,

North, engender snow. The North winde also bringeth in haile, so doth *Corus*. The South wind G
is exceeding hot and troublous withall. *Vulturnus* and *Fauonius* be warme. They also be drier than the East, and generally all winds from the North and West are drier than from the South and East. Of all winds the Northern is most healthfull: the Southern wind is noisome, and the rather when it is drie, haply, because that when it is moist, it is the colder. During the time that it bloweth, liuing creatures are thought to be lesse hungry: the *Etesiæ* giue ouer ordinarily in the night, & arise at the third houre of the day. In Spaine and Asia they blow from the East: but in Pontus, from the North: in other quarters from the South. They blow also after the Mid-winter, when they be called *Orinthiæ*, but those are more milde, & continue fewer daies. Two there be that change their nature together with their site and place: the South winde in Affrick bringeth faire weather, and the North wind there is cloudy. All winds keep their course in order for H
the more part, or els when one ceaseth, the contrary beginneth. When some are laid, & the next to them do arise, they go about from the left hand to the right, according to the Sun. Of their manner and order monthly, the prime or fourth day after the change of the Moone, doth most commonly determine. The same windes wil serue to saile contrariwise, by means of setting out the sailes: so as many times in the night, ships in sailing run one against another. The South winde raiseth greater billowes and more surging waues than the North: for that the South wind swelleth below from the bottome of the Sea; the other blustereth aloft, and troubleth the top of the water. And therefore after Southern winds, earth-quakes are most hurtful. The South wind in the night time is more boisterous, the Northerne wind in the day. The winds blowing from the East, hold and continue longer than those from the West. The Northern winds giue I
ouer commonly with an odde number: which obseruation serueth to good vse in many other parts of naturall things, and therfore the male winds are iudged by the odde number. The Sun both raiseth, and also laieth the windes. At rising and setting hee causeth them to be aloft: at noon-tide he represseth and keepeth them vnder, in Summer time. And therefore at mid-day or mid-night commonly the winds are down and lie still, for both cold and heat if they be immoderate, do spend and consume them. Also rain doth lay the winds: and most commonly from thence they are looked for to blow, where clouds break and open the skie to be seen. And verily *Eudoxus* is of opinion (if wee list to obserue the least reuolutions) that after the end of euery fourth yere, not only all winds, but other tempests and constitutions also of the weather, return K
again to the same course as before. And alwaies the Lustrum or computation of the fiue yeres beginneth at the leap yere, when the Dog-star doth arise. Thus much touching general winds.

Chap. XLVIII.

¶ *Of sudden Blasts.*

NOw will we speake of sudden blasts; which being risen (as hath bin said before) by exhalations of the earth, and cast downe againe; in the meane while appeare of many fashions, enclosed within a thin course of clouds newly ouercast. For such as be vnconstant, wandering, and rushing in manner of land flouds (as some men were of opinion, as wee haue shewed) bring forth thunder and lightening. But if they come with a greater force, sway, and violence, and withall burst and cleaue a dry cloud asunder all abroad, they breed a storme, which of L
the Greeks is called *Ecnephias*: but if the cliff or breach be not great, so that the wind be constrained to turne round, to roll and whirle in his discent, without fire (*i.*) lightening, it makes a whirle-puffe or ghust called *Typhon* (*i.*) the storme *Ecnephias* aforesaid, sent out with a winding violence. This takes with it a piece broken out of a congealed cold cloud, turning, winding, and rolling it round, and with that weight maketh the owne fall more heauie, and changeth from place to place with a vehement and sudden whirling; the greatest danger and mischiefe that poore fishers haue at sea, breaking not onely their crosse saile yards, but also writhing and burstings in pieces the very ships: and yet a small matter is the remedy for it, namely, the casting of vinegar against it as it commeth, which is of nature most cold. The same storme beating M
vpon the sea, is it selfe smitten backe againe with a violence, and snatcheth vp whatsoeuer it meeteth in the way aloft into the skie, carrying it back, and swallowing it vp on high. But if it breake out hauing greater hole of the said cloud, by it so borne down, and yet not altogether so bound as the aboue-named storm *Prester* doth, nor without a cracke; they call this boisterous winde

A wind *Turbo*, casting downe and ouerthrowing all that is next it. The same, if it be more hot and catching a fire as it rageth, is named *Prester*; burning, and withall laying along, whatsoeuer it toucheth and encountereth.

Chap. XLIX.

¶ *Other enormious kindes of Tempests.*

NO *Typhon* commeth from the North, ne yet any *Ecnephias* with snow, or while snow lieth on the ground. This tempestuous winde, if when it brake the cloud burned light withall, hauing fire of the owne before, and catched it not afterward, it is very lightning; and
B differeth from *Prester*, as the flame from a cole of fire. Againe, *Prester* spreadeth broad with a flash and blast; the other gathereth round with forcible violence. *Typhon* moreouer or *Vortex*, differeth from *Turben* in flying backe, and as much as a crash from a cracke. The storme *Procella* from them both, in breadth: and to speake more truly, rather scattereth than breaketh the cloud. There riseth also vpon the sea a darke mist, resembling a monstrous beast; and this is euer a terrible cloud to sailers. Another likewise called a Columne or Pillar, when the humour and water ingendred is so thicke and stiffe congealed, that it standeth compact of it selfe. Of the same sort also is that cloud which draweth water to it, as it were into a long pipe.

Chap. L.

C

¶ *In what Lands Lightenings fall not.*

IN Winter and Summer seldome are there any Lightnings, and that is long of contrary causes: because in Winter the aire is driuen close together, and thickened with a deeper course of clouds: besides, all the exhalations breathing and rising out of the earth, being stark, congealed, and frozen hard, do extinguish cleane what firie vapour soeuer otherwise they receiue: which is the reason that Scythia and other cold frozen quarters thereabout, are free from lightenings. And Ægypt likewise vpon the contrarie cause, and exempt from Lightnings; namely,
D exceeding heate: for the hot and dry exhalations of the earth, gather into very slender, thin, and weake clouds. But in the Spring and Autumne, lightnings are more rife; because in both those seasons, the causes as well of Summer as Winter, are confused and corrupt. And this is the reason also, that lightnings are common in our Italie; for that the aire being more moueable and wauering, by reason of a kinder Winter and a cloudie Summer, is alwaies of the temperature of Spring or Autumne. In those parts also of Italy which lie off from the North, and encline to warmth (as namely in the tract about Rome and Campania) it lightneth in Winter and Summer alike, which happeneth in no other part thereof.

Chap. LI.

E

¶ *Sundry sorts of Lightnings, and Wonders thereof.*

VErie many kindes of Lightnings are set downe by Authors. Those that come drie, burne not at all, but onely dissipate and disperse. They that come moist, burne not neither, but blast things, and make them looke duskish. Now a third kinde there is, which they call Bright and Cleare, and that is of a most strange and wonderfull nature; whereby tuns and such like vessels are drawne drie, and their sides, hoops, and heads, neuer toucht therewith or hurt, nor any other shew and token thereof is left behinde: Gold, copper, and siluer money is melted in the bags, and yet the very bags no whit scorched, no nor the wax of the seale hurt and defaced, or put out of order. *Martia* a noble Ladie of Rome being great with childe, was strucke with
F lightning: the childe she went withall was killed within her, and she without any harme at all liued still. Among the *Catiline* prodigies it is found vpon Record, that *M. Herennius* (a Counsellor and States-man of the incorporate towne Pompeianum) was in a faire and cleare day smitten with Lightning.

Chap. LII.

¶ *Of obſervations as touching Lightning.*

THe Antient Tuſcanes by their learning do hold, that there be nine gods that ſend forth Lightnings, and thoſe of eleuen ſorts: for *Iupiter* (ſay they) caſteth three at once. The Romans haue obſerued two of them, and no more; attributing thoſe in the day time to *Iupiter*; and them in the night to *Summanus* or *Pluto*. And theſe verily be more rare, for the cauſe aforenamed; namely, the coldneſſe of the aire aboue. In Hetruria, they ſuppoſe that lightnings break alſo out of the earth, which they call *Inferiæ*, Infernall; and ſuch be made in Mid-winter. And theſe they take to be terrene and earthly, and of all moſt miſchieuous and execrable: neither be theſe generall and vniuerſall lightnings, nor proceeding from the ſtars, but from a very neere and more troubled cauſe. And this is an euident argument for diſtinction; that all ſuch as fall from the vpper skie aboue, ſtrike aſlant and ſide-wiſe: but thoſe which they call earthly, ſmite ſtraight and directly. But the reaſon why theſe are thought to iſſue forth of the earth is this; becauſe they fall from out of a matter neerer to the earth, forasmuch as they leaue no markes of a ſtroke behind: which are occaſioned by force not from beneath, but comming full againſt. Such as haue ſearched more ſubtilly into theſe matters, are of opinion, that theſe lightnings come from the Planet *Saturne*, like as the burning lightning from *Mars*: And with ſuch lightning was Volſinij (a moſt welthy citie of the Tuſcanes) burnt full and whole to aſhes. Moreouer, the Tuſcanes call thoſe lightnings Familiar, which preſage the fortune of ſome race, and are ſignificant during their whole life: and ſuch are they that come firſt to any man, after he is newly entred into his owne patrimonie or familie. Howbeit their iudgement is, that theſe priuat lightnings are not of importance and fore-tokening aboue ten yeres; vnleſſe they happen either vpon the day of firſt mariage, or of wedding. As for publique lightnings, they be not of force aboue 30 yeares, except they chance at the very time that townes or colonies be erected and planted.

Chap. LIII. ¶ *Of raiſing or calling out Lightnings by Coniuration.*

IT appeareth vpon record in Chronicles, that by certaine ſacrifices and prayers, Lightnings may be either compelled or eaſily intreated to fall vpon the earth. There goeth a report of old in Hetruria, that ſuch a lightning was procured by exoreiſmes and coniurations, when there entered into the citie Volſinij (after all the territory about it was deſtroyed) a monſter which they named *Volta*. Alſo, that another was raiſed and coniured by *Porſenna* their King. Moreouer, *L. Piſo* (a writer of good credit) reporteth in his firſt booke of Annales, that *Numa* before him practiſed the ſame feat many a time and often: and when *Tullus Hoſtilius* would haue imitated him and done the like (for that he obſerued not all the ceremonies accordingly) was himſelfe ſtrucke and killed with lightning. And for this purpoſe, ſacred groues we haue and altars, yea and certaine ſacrifices due thereto. And among the *Iupiters* ſurnamed *Statores*, *Tonantes*, and *Feretrij*, we haue heard that one alſo was called *Elicius*. Sundry and diuers are mens opinions as touching this point, and euery man according to his owne liking and fancie of his minde. To beleeue that Nature may be forced and commanded, is a very audacious and bold opinion: but it is as blockiſh on the other ſide, and ſenceleſſe, to make her benefits of no power and effect; conſidering that in the interpretation of Lightning, men haue thus farre forth proceeded in skill and knowledge, as to foretell when they will come at a ſet and preſcript day: and whether they will fordoe and fruſtrate the dangers pronounced, or rather open other deſtinies, which lie hidden: and an infinite ſort of publicke and priuat experiments of both kinds are to be found. And therefore (ſince it hath ſo pleaſed Nature) let ſome men be reſolued herein, and others doubtfull: ſome may allow thereof, and others condemne the ſame. As for vs, we will not omit the reſt which in theſe matters are worth remembrance.

Chap. LIIII. ¶ *Generall rules of Lightning.*

THat the Lightning is ſeene before the Thunderclap is heard, although they come indeed ſolemnly both togither, it is certainely knowne. And no maruell, for the eye is quicker to ſee light, than the eare to heare a ſound. And yet Nature doth ſo order the number and meaſure,

meaſure, that the ſtroke and the ſound ſho uld accord together. But when there is a noiſe, it is a ſigne of the lightning proceeding of ſome naturall cauſe, and not ſent by ſome god: and yet euermore this is a breath or winde that commeth before the thunderbolt: and hereupon it is, that euery thing is ſhaken and blaſted ere it be ſmitten; neither is any man ſtricken, who either ſaw the lightning before, or heard the thunderclap. Thoſe lightnings that are on the left hand, be ſuppoſed to be luckie and proſperous, for that the Eaſt is the left ſide of the world: but the coming therof is not ſo much regarded as the return, whether the fire leap back after the ſtroke giuen; or whether after the deed done and fire ſpent, the ſpirit and blaſt aboue ſaid retire backe againe. In that reſpect the Tuſcans haue diuided the heauen into 16 parts. The firſt, is from the North to the Suns riſing in the Equinoctiall line: the ſecond, to the Meridian line, or the South: the third, to the Sun-ſetting in the Equinoctiall: and the fourth taketh vp all the reſt from the ſaid Weſt to the North ſtar. Theſe quarters againe they haue parted into foure regions apiece: of which eight from the Sun-riſing, they called the Left; & as many again from the contrary part, the Right. Which conſidered, moſt dreadfull and terrible are thoſe lightnings, which from the Sun-ſetting reach into the North; and therefore it skilleth very much, from whence lightnings come, and whither they go: the beſt thing obſerued in them is, when they return into the Eaſterly parts. And therefore when they come from that firſt and principall part of the skie, and haue recourſe again into the ſame, it is holden for paſſing good hap: & ſuch was the ſigne and token of victories giuen (by report) to *Sylla* the Dictatour. In all other parts of the element they be leſſe fortunate or fearful. They that haue written of theſe matters, haue deliuered in writing, that there be lightnings, which to vtter abroad is held vnlawful; as alſo to giue eare vnto them, if they be diſcloſed, vnleſſe they be declared either to parents, or to a friend and gueſt. How great the vanity is of this obſeruation, was at Rome, vpon the blaſting of *Iunoes* temple, found by *Scaurus* the Conſull, who ſoone after was Preſident of the Senate. It lightneth without thunder, more in the night than day time. Of all creatures that haue life and breath, man only it doth not alwaies kill; the reſt, it diſpatcheth preſently. This priuiledge & honour we ſee Nature hath giuen to him; whereas otherwiſe ſo many great beaſts ſurpaſſe him in ſtrength. All other creatures ſmitten with lightning, fall downe vpon the contrary ſide; man onely (vnleſſe he turne vpon the parts ſtricken) dyeth not. Thoſe that are ſmitten from aboue vpon the head, lie downe and ſinke directly. He that is ſtricken watching, is found dead with his eies winking and cloſe ſhut; but whoſoeuer is ſmitten ſleeping, is found open eied. A man thus comming by his death, may not by law be burned: Religion hath taught, that he ought to be enterred and buried in the earth. No liuing creature is ſet a fire by lightning, but it is breathleſſe firſt. The wounds of them that be ſmitten with thunderbolts, are colder than all the body beſides.

Chap. LV.

¶ *What things are not ſmitten with Lightning.*

OF all thoſe things which grow out of the earth, Lightning blaſteth not the Laurell tree, nor entreth at any time aboue fiue foot deep into the ground; and therefore, men fearfull of lightning, ſuppoſe the deeper caues to be the ſureſt and moſt ſafe: or els booths made of skins of ſea-beaſts, which they call Seales, or Sea-calues; for of all creatures in the ſea, this alone is not ſubiect to the ſtroke of lightning; like as of all flying foules the Eagle, (which for this cauſe is imagined to be the armour-bearer of *Iupiter*, for this kinde of weapon.) In Italie betweene Tarracina and the temple of *Feronia*, they gaue ouer in time of warre, to make towers and forts; for not one of them eſcaped, but was ouerthrowne with lightning.

Chap. LVI.

¶ *Of ſtrange and prodigious raine, to wit, of Milke, Bloud, Fleſh, Iron, Wooll, Tyles, and Brickes.*

BEſides theſe things aboue, in this lower region vnder heauen, we finde recorded in monuments, that it rained milke and bloud, when *M. Acilius* and *C. Porcius* were Conſuls. And many times elſe beſides it rained fleſh; as namely, whiles *L. Volumnius* and *Serv. Sul-*

pitius were Consuls: and look what of it the foules of the aire caught not vp nor carried away, G
it neuer putrified. In like manner, it rained yron in the Lucanes countrey, the yere before that *M. Crassus* was slaine by the Parthians, and together with him all the Lucanes his souldiers, of whom there were many in his army. That which came downe in this raine resembled in some sort Sponges: and the Wisards and Southsayers being sought vnto, gaue warning to take heed of wounds from aboue. But in the yere that *L. Paulus*, and *C. Marcellus* were Consuls, it rained wooll about the Castle Carissa, neare to which a yeare after, *T. Annius Milo* was slaine. At the time that the same *Milo* pleaded his owne cause at the bar, there fell a raine of tyles and bricks, as it is to be seen in the Records of that yeare.

Chap. LVII. H

¶ *Of the rustling of Armour and sound of Trumpets heard from Heauen.*

IN the time of the Cimbrian warres, we haue bin told, that Armour was heard to rustle, and the trumpet to sound out of heauen. And this happened very often both before and after those wars. But in the third Consulship of *Marius*, the Amerines and Tudertes saw men in armes in the skie, rushing and running one against another from the East and West; and might behold those of the West discomfited. That the very firmament it selfe should be of a light fire, it is no maruel at all; for oftentimes it hath been seene, when clouds haue caught any greater deale of fire. I

Chap. LVIII

¶ *Of Stones falling downe from the Skie.*

AMong the Greeks there is much talke of *Anaxagoras Clazomenius*, who by his learning and skill that he had in Astronomie, foretold in the second yeare of the 78 Olympias, what time a stone should fall from out of the Sun: and the same happened accordingly in the day time, in a part of Thracia neere the riuer Aegos, which stone is shewed at this day as big as a waine load, carrying a burnt and adust colour: at what time as a comet or blazing starre also K
burned in those nights. Which if any man beleeue that it was fore-signified, must needs also confesse, that this diuinitie or fore-telling of *Anaxagoras* was more miraculous and wonderfull than the thing it selfe: and then farewell the knowledge of Natures workes, and welcome confusion of al, in case we should beleeue that either the Sun were a stone, or that euer any stone were in it. But, that stones fall oftentimes downe, no man will make any doubt. In the publicke place of Exercise in Abydos, there is one at this day vpon the same cause preserued and kept for to be seene, and held in great reuerence: it is but of a meane and small quantity, yet it is that which the selfe-same *Anaxagoras* (by report) fore-signified that it should fal in the mids of the earth. There is one also at Cassandria, which was in old time vsually called Potidæa, a colony from thence deducted. I my selfe haue seene another in the territorie of the Vocantians, which L
was brought thither but a little before.

Chap. LIX. ¶ *Of the Rainebow.*

THose which we call Rain-bowes are seene often without any wonder at all, or betokening any great matter: for they portend not so much as rainy or faire daies, to trust vpon. But manifest it is, that the Sun beames striking vpon an hollow cloud, when their edge is repelled, are beaten backe against the Sun: and thus ariseth varietie of colours by the mixture of clouds, aire, and firie light together. Certes, they neuer are knowne but opposite to the Sun; nor at any time otherwise than in forme of a Semicircle: ne yet in the night season, although M
Aristotle saith there was a Rain-bow seen by night: howbeit he confesseth, that it could not possibly be but at the full of the Moone. Now they happen for the most part in winter, namely from the Autumne Equinoctiall, as the daies decrease and wax shorter. But as daies grow longer againe, that is to say, after the Spring Equinoctiall, they be not seene no more than about the Summer Sunstead, when daies are at longest. But in Bruma, namely when they bee shortest

A rest, they chance very often. The same appeare aloft, when the Sun is low; and below, when he is aloft. Also, they be of narrower compasse, when the Sun either riseth or setteth, but their body spreadeth broad: and at noone narrower it is, and smal, yet greater and wider in circumference. In Sommer time they be not seene about noon-tide, but after the Autumne Equinoctial, at all houres; and neuer more at once than twaine. The rest of the same nature I see few men doe make any doubt of.

Chap. LX.

¶ *Of Haile, Snow, Frost, Mist, and Dew.*

B HAile is ingendred of Raine congealed into an Ice: and Snow of the same humor growne together, but not so hard. As for frost, it is made of dew frozen. In winter Snowes fall, and not haile. It haileth oftner in the day time than in the night, yet haile sooner melteth by farre than snow. Mists be not seene neither in Summer, nor in the cold weather. Dewes shew not either in frost, or in hot seasons; neither when winds be vp, but only after a calm and cleere night. Frosts dry vp wet and moisture; for when the yce is thawed and melted, the like quantitie of water in proportion is not found.

Chap. LXI.

¶ *Of the shapes of Clouds.*

C SVndry colours and diuers shapes are seene in clouds, according as the fire intermingled therein is either more or lesse.

Chap. LXII.

¶ *Of the properties of weather in diuers places.*

MOreouer, many properties there be of the weather, peculiar to certain places: the nights in Africke be dewie in Winter. In Italy, about Locri and the lake Velinus, there is not D a day but a Rainbow is seene. At Rhodes and Syracusæ, the aire is neuer so dimme and cloudy, but one houre or other the Sun shineth out. But such things as these shall be related more fitly in due place. Thus much of the Aire.

Chap. LXIII.

¶ *Of Earth, and the nature thereof.*

THe Earth followeth next: vnto which alone of all parts of the world, for her singular benefits we haue giuen the reuerend and worshipfull name of Mother. For like as the Heauen is the (mother) of God, euen so is she of men. She it is that taketh vs when wee are comming into the world, nourisheth vs when we are new borne: and once being come abroad, E euer sustaineth and beareth vs vp: and at the last when wee are reiected and forlorne of all the world besides, she embraceth vs: then most of all other times, like a kinde mother, she couereth vs all ouer in her bosom; by no merit more sacred than by it, wherwith she maketh vs holy and sacred; euen bearing our tombes, monuments, and titles, continuing our name, and extending our memorie, therby to make recompence and weigh against the shortnes of our age: whose last power we in our anger wish to be heauy vnto our enemy, and yet she is heauy to none, as if wee were ignorant that she alone is neuer angry with any man: waters ascend vp, & turn into clouds, they congeale and harden into haile, fiuel they do into waues and billows, & down they hasten headlong into brooks and land-flouds. The aire is thickened with clouds, & rageth with winds F and stormes. But she is bountifull, mild, tender ouer vs, & indulgent, ready at all times to attend and wait vpon the good of mortall men. See what she breeds being forced: may, what she yeeldeth of her owne accord! what odoriferous smells, and pleasant fauors! what wholesome iuices and liquors, what soft things to content our feeling, what louely colors doth she giue to please our eie, how faithfully and iustly doth she repay with vsury that which was lent and credited out vnto her! Finally, what store of all things doth shee feed and nourish for our sake! Alas

poore wretch, pestiferous and hurtfull creatures, when the vitall breath of the aire was too blame G
to giue them life, she could not otherwise chuse but receiue them, after they were sown in her,
and being once ingendred and bred, keepe and maintain them. But in that they prooued after-
wards bad and venomous, the fault was to be laid vpon the parents that ingendred them, and
not to be imputed vnto her. For, shee entertaineth no more a venomous serpent after it hath
stung a man: nay, more than that, she requireth punishment, for them that are slow and negli-
gent of themselues to seeke it. She it is that bringeth forth medicinable herbes, and euermore
is in trauell to be deliuered of some thing or other, good for man. Ouer and besides, it may be
thought and beleeued, that for very pittie of vs the ordained and appointed some poisons, that
when we were weary of our life, cursed famine (most aduerse and crosse of all other to the me-
rits of the earth) should not consume and waste vs with languishing and pining consumption, H
and so procure our death; that high and steepe rockes should not dash and crush our bodies in
pieces; nor the ouerthwart and preposterous punishment by the halter, wreathe our necks, and
stop that vitall breath which we seek to let out and be rid of: last of all, that we might not worke
our owne death in the deep sea, and being drowned feed fishes, and be buried in their bellies; ne
yet the edge and point of the sword cut and pierce our bodie, and so put vs to dolorous paine.
So that it is no doubt, but in a pittifull regard and compassion of vs, thee hath ingendred that
poyson, by one gentle draught whereof, going most easily downe, we might forgoe our life, and
die without any hurt and skin broken of our body, yea, and diminish no one drop of bloud:
without grieuous paine, I say, and like onely to them who be athirst: that being in that manner
dead, neither foule of the aire, nor wilde beast prey vpon or touch our bodies, but that he should I
be reserued for the earth, who perished by himselfe and for himselfe: and, to confesse and say the
truth, the earth hath bred the remedy of all miseries, how soeuer we haue made it a venome and
poison to our life. For after the like sort we employ iron and steele, which we cannot possibly be
without. And yet we should not do well and iustly to complain, in case she had brought it forth
for to do hurt and mischiefe. Now surely to this only part of Nature and the world, we are vn-
thankfull, as though thee serued not mans turne for all dainties; not for contumely and reproch
to be misused. Cast she is into the sea, or else to let in peeres and frithes, eaten away with water.
With yron tooles, with wood, fire, stone, burdens of corne tormented she is euery houre: and all
this much more to content our pleasures and wanton delights than to serue vs with naturall
food and necessary nourishment. And yet these misusages which she abideth aboue, and in her
outward skin, may seeme in some sort tolerable. But we, not satisfied therewith, pierce deeper K
and enter into her very bowels, we search into the veines of gold and siluer, we mine and dig for
copper and lead metrals. And for to seek out gemmes and some little stones, we sinke pits deep
within the ground. Thus we plucke the very heart-strings out of her, and all to weare on our fin-
ger one gemme or precious stone, to fulfill our pleasure and desire. How many hands are worne
with digging and delling, that one ioynt of our finger might shine again. Surely, if there were
any diuels or infernall spirits beneath, ere this time verily these mines (for to feed couetousnes
and riot) would haue brought them vp aboue ground. Maruell we then, if she hath brought
forth some things hurtfull and noisome? But sauage beasts (I well thinke) ward and saue her,
they keepe sacrilegious hands from doing her iniurie. Nay ywis it is nothing so. Dig we not L
amongst dragons and serpents and together with veines of gold, handle we not the roots of
poisoned and venomous herbes? howbeit this goddesse we finde the better appaied, and lesse
discontented for all this mischiefe, for that the end and issue of all this wealth tends to wic-
kednesse, to murders and wars, and her whom we drench with our bloud, we couer also with vn-
buried bones. Which neuertheles she, as if she did reproue and reproch vs for this rage and fu-
rie of ours, she her selfe couereth in the end, and hideth close euen the wicked parts of mortall
men. Among other imputations of an vnthankfull minde, I may well count this also, That we
be ignorant of her nature.

Chap. LXIIII. ¶ *Of the forme of the earth.*

M

The first and principall thing that offereth it selfe to be considered, is her figure, in which
by a generall consent we doe all agree. For surely we speake and say nothing more com-
monly, than the round ball of the earth; and confesse that it is a globe enclosed within
2 poles. But yet the forme is not of a perfect and absolute roundle, considering so great heigth of

A of hills and such plaines of downs: howbeit, if the compasse therof might be taken by lines, the
ends of those lines would meet iust in circuit, and proue the figure of a iust circle. And this
the very consideration of naturall reason doth force and conuince, although there were not
those causes which we alledged about the heauen. For in it the hollow bending conuexitie
boweth and beareth vpon it selfe, and euery way resteth vpon the centre thereof, which is that
of the earth. But this, being solid and close compact, ariseth still like as if it swelled, stretching
and growing forth. The heauen bendeth and inclineth toward the centre, but the earth goeth
from the centre, whiles the world with continuall volubilitie and turning about it, driueth
the huge and exceeding globe thereof into the forme of a round ball.

B

Chap. lxv.

¶ *Of the Antipodes, whether there be any such. Also of the roundnesse of water.*

Much adoe there is here, and great debate betweene learned men; and contrariwise those
of the leaud and ignorant multitude: for they hold, that men are ouerspread on all
parts vpon the earth, and stand one against another, foot to foot: also that the Zenith
or point of the heauen is euen and alike vnto all: and in what part soeuer men be, they go still
and tread after the same manner in the middest. But the common sort aske the question and
demand, How it happeneth that they opposite iust against vs fall not into Heauen? as if there
C were not a reason also ready, That the Antipodes against shall maruell why we fell not downe.
Now there is reason that commeth betweene, carrying a probabilitie with it euen to the mul-
titude, were it neuer so blockish and vnapt to learne; That in an vneuen and vnequall Globe
of the Earth, with many ascents and degrees, as if the figure thereof resembled a Pine apple,
yet neuertheless it may be well enough inhabited all ouer in euery place. But what good
doth all this, when another wonder as great as it ariseth? namely, That it selfe hangeth, and
yet falleth not together with vs: as if the power of that Spirit especially which is enclosed in
the World were doubted: or that any thing could fall, especially when nature is repugnant
thereto, and affordeth no place whither to fall: for like as there is no seat of Fire, but in fire; of
Water, but in water; of Aire and Spirit, but in aire; euen so, there is no roome for Earth but
D in earth, seeing all the Elements besides, are ready to put it backe from them. Howbeit, won-
derfull it remaineth still, How it should become a Globe, considering so great flatnesse of
Plaines and Seas! Of which doubtfull opinion, *Dicearchus* (a right learned man as any other)
is a fauourer; who, to satisfie the curious endeauours of Kings and Princes, had a charge and
commission to leuell and take measure of mountaines: of which he said, that Pelion the high-
est, was a mile and a halfe high by the plumbe rule; and collected thereby, that it was no-
thing at all to speake of, in comparison of the vniuersall rotunditie of the whole. But surely
in my conceit, this was but an vncertaine gueese of his, since that I am not ignorant, that cer-
taine tops of the Alpes, for a long tract together, arise not vnder fiftie miles in heigth.

But this is it that troubles the vulgar sort most of all, if they should be forced to beleeue, that
E the forme of water also gathers round in the top. And yet there is nothing in the whole world
more euident to the sight, for the drops euery where not onely as they hang, appeare like little
round bals, but also if the light vpon dust, or rest vpon the hairy downe of leaues, we see they
keep a perfect and exquisite roundnes. Also in cups that are filled brim full, the middle part in
the top swell most. Which thing considering the thinnes of the humour, and the softnes there-
of setling flat vpon it selfe, are sooner found out by reason, than by the eie. Nay, this is a thing
more wonderfull, that when cups are filled to the full, put neuer so little more liquor thereto, the
ouerplus will run ouer all about: but contrariwise it falleth out, if you put in any solid weights,
yea, and it were to the weight of twenty deniers or French crowns in a cup. Forsooth the reason
is this, for that these things receiued within lift vp the liquor aloft to the top, but poured vpon
the tumour that beareth aloft aboue the edges, they must needs glide off and run by. The same
is the reason why the land cannot be seen by them that stand vpon the hatches of the ship, but
very plainly at the same time from the top of the masts. Also as a ship goeth a far off from the
land, if any thing that thineth and giueth light be fastened to the top-gallant, it seemeth from
the land side to goe downe and sinke into the sea by little and little, vntill at last it be hidden
cleane.

clean. Last of all the very Ocean, which we confesse to be the vtmost and farthest bound enuironing the whole globe, by what other figure elsse could it hold together, and not fall downe, since there is no other banke beyond it to keepe it in? And euen this also is as great a wonder, how it commeth to passe, although the sea grow to be round, that the vtmost edge thereof falleth not downe? Against which, if the seas were euen, flat, and plaine, and of that forme as they seem to be, the Grecke Philosophers to their own great ioy and glory do conclude, and proue by Geometricall subtill demonstration, that it cannot possibly be that the waters should fall. For seeing that waters run naturally from aloft to the lower parts, and that all men confesse, that this is their nature, and no man doubteth that the water of the sea came euer in any shore so far as the deuexitie would haue suffered; doubtlesse it appeares, that the lower a thing is, the neerer it is to the centre; and that all the lines which from thence are sent out to the next waters, are shorter than those which from the first waters reach to the vtmost extremitie of the sea. Hereupon the whole water from euery part thereof bends to the centre, and therfore falls not away, because it inclines naturally to the inner parts. And this we must beleeue that Nature the work-mistresse framed and ordained so, to the end that the earth being dry, could not by it selfe alone, without some moisture keepe any consistence; and the water likewise could not abide and stay vnlesse the earth vpheld it; in which regard they were mutually to embrace one another, and so be vnited, whiles the one opened all the creeks and nouks, and the other ran wholly into the other, by means of secret veins within, without, and aboue, like ligaments to claspe it, yea, and so break out at the vtmost tops of hils; whether being partly caried by a spirit, and partly expressed forth by the ponderositie of the earth, it mounteth as it were in pipes: and so far is it from danger of falling away, that it leapeth vp to the highest and loftiest things that be. By which reason it is euident also, why the seas swell not and grow, notwithstanding so many riuers daily run into them.

G H I K L M

Chap. lxxvj.

¶ *How the matter is vnited and knit to the earth.*

THe earth therefore in his whole globe is in the midst thereof, hemmed in by the sea running round about it. And this need not to be sought out by reason and argument, for it is knowne already by good proofe and experience.

Chap. lxxvij.

¶ *Nauigation vpon the sea and great Riuers.*

FRom Gades and *Hercules* pillars, the West sea is at this day nauigable and sailed all ouer euen the whole compasse of Spaine and France. But the North Ocean was for the most part discouered vnder the conduct of *Augustus Cæsar* of famous memorie, who with a fleet compassed all Germanie, and brought it about as far as to the cape of the Cimbrians: and so from thence hauing kenned and viewed the vast and wide sea, or else taken notice thereof by report, he passed to the Scythian Clymat and those cold coasts, frozen, and abounding with too much moisture. For which cause there is no likelihood that in those parts the seas are at an end, whereas there is such excessiue wet that all stands with water. And neere vnto it from the East, out of the Indian sea, that whole part vnder the same clyme of the world which bendeth vnder the Caspian sea, was sailed throughout by the Macedonian armies, when *Seleuchus* and *Antiochus* reigned, who would needs haue it so, that *Seleuchus* and *Antiochus* should beare their names. About the Caspian sea also many coasts and shores of the Ocean haue bin discouered, and by piece-meale rather than all whole at once, the North of one side or other hath been sailed or rowed ouer. But yet to put all out of coniecture, there is a great argument collected out of the Mere Mæotis, whether it be a gulfe and arme of that Ocean (as I know many haue beleeued) or an ouerflowing of the same, and diuided from it by a narrow piece of the continent. In another side of Gades, from the same West, a great part of the South or Meridian gulfe round about Mauritania is at this day sailed. And the greater part verily of it, like as of the East also, the victories of *Alexander* the Great viewed and compassed on euery side, euen as farre as vnto the Arabian Gulfe. Wherein when *Caius Cæsar*, the sonne of *Augustus*, warred,

A warred in those parts, the marks and tokens by report were seen remaining after the Spaniards shipwracke. *Hanno* likewise in the time that Carthage flourished in puissance sailed round about from Gades to the vtmost bounds and lands end of Arabia, and set downe that his voyage in writing. Like as also *Himilco* was at the same time sent out in a voyage to discouer the vtter coasts of Europe. Moreouer, *Cornelius Nepos* writeth, that in his time one *Eudoxius* a great sailer, at what time he fled from King *Lathyrus*, departed out of the Arabian gulfe, and held on his course as far as Gades. Yea, and *Cælius Antipater* long before him reporteth, that he saw the man who had sailed out of Spain to Æthiopia for traffique of merchandise. The same *Nepos* maketh report as touching the compassing about of the North, That vnto *Qu. Metellus Celer*,
B Colleague to *C. Afranius* in the Consulship, but at that time Proconsull in Gaule; certain Indians were giuen by a King of the Sueuians, who as they sailed out of India for traffick as merchants, were driuen by tempests, and cast vpon Germanie. Thus the seas flowing on all sides about this globe of the earth, diuided and cut into parcels, bereaue vs of a part of the world, so as neither from thence hither, nor from hence thither there is a thorow-faire and passage. The contemplation whereof feruing fit to discouer and open the vanitie of men, seemes to require and challenge of me, that I should proiect to the view of the eye, how great all this is, whatsoeuer it be, and wherein there is nothing sufficient to satisfie and content the feuerall appetite of each man.

Chap. lxviij.

C

¶ *What portion of the earth is habitable.*

NOw first and formost me thinks men make this reckoning of the earth, as if it were the iust halfe of the globe, and that no portion of it were cut off by the Ocean: which notwithstanding, clasping round about all the midst thereof, yeelding forth and receiuing againe all other waters besides, and what exhalations soeuer that go out for clouds, and feeding withall the very starres, so many as they be, and of so great a bignesse, what a mighty space thinke you will it be thought to take vp and inhabit, and how little can there be left for men to inhabit? surely the possession of so vast and huge a deale must needs be exceeding great and infinite. What say you then to this, That of the earth which is left the heauen hath taken a-
D way the greater part? For whereas there be of the heauen fiue parts, which they call Zones; all that lieth vnder the two vtmost, to wit, on both sides about the poles, namely this here, which is called *Septentrio*, that is to say, the North, and the other ouer against it, named the South, it is ouercharged with extreme and rigorous cold, yea, and with perpetuall frosts and ice. In both Zones it is alwaies dim and darke, and by reason that the aspect of the more milde and pleasant planets is diuerted cleane from thence, the light that is, sheweth little or nothing, and appeareth white with the frost onely. Now the middle of the earth, whereas the Sun hath his way, and keepeth his course, scorched and burnt with flames, is euen parched and fried againe with the hot gleames thereof, being so neere. Those two only on either side about it, namely betweene this burnt Zone and the two frozen, are temperate; and euen those haue not accesse
E and passage the one to the other, by reason of the burning heate of the said planet. Thus you see that the heauen hath taken from the earth three parts, and what the Ocean hath plucked from it besides no man knoweth. And euen that one portion remaining vnto vs, I wot not whether it be not in greater danger also. For the same Ocean entring, as we will shew, into many armes and creekes, keepeth a roaring against the other gulfes and seas within the earth, and so neere comes vnto them, that the Arabian gulfe is not from the Egyptian sea aboue 115 miles: the Caspian likewise from the Ponticke but 375. Yea, and the same floweth between, and entreth into so many armes, as that thereby it diuideth Africke, Europe, and Asia asunder. Now what a quantity of land it taketh vp may be collected and reckoned at this day, by the measure and proportion of so many riuers, and so great Meres. Adde thereto both Lakes and pooles,
F and withall take from the earth the high mountaines bearing vp their heads aloft into the sky, so as the eye can hardly reach their heights: the woods besides, and steepe descents of the vallies, the Wildernesses, and waste wildes left desart vpon a thousand causes. These so many pieces of the earth, or rather, as most haue written, this little pricke of the world (for surely the earth is nothing else in comparison of the whole) is the only matter of our glory. This, I say,

is

is the very seat thereof: here we seeke for honors and dignities; here we exercise our rule and G
authoritie: here we couet wealth and riches: here all mankinde is set vpon stirs and troubles;
here we raise ciuill wars still one after another, and with mutuall massacres and murthers wee
make more roome in the earth. And to let passe the publique furious rages of nations abroad,
this is it, wherein we chase and driue out our neighbor borderers, and by stealth dig turfe from
their soile to put vnto our owne: and when a man hath extended his lands, and gotten whole
countries to himselfe far and neere, what a goodly deale of earth enioyeth he: and say that he
set out his bounds to the full measure of his couetous desires, what a great portion thereof shal
he hold when he is once dead, and his head laid low.

Chap. LXIX. H

¶ *That the earth is in the middest of the world.*

That the earth is in the midst of the whole world it appeareth by manifest and vndoubted
reasons: but most euidently by the equal houres of the Equinoctial; for vnlesse it were
in the midst, the Astrolabe and instruments called *Diophæ* haue proued, that nights and
daies could not possibly be found equall: and those aboue-said instruments aboue all other
confirme the same: seeing that in the Equinoctial, by one and the same line both rising and
setting of the Sun are seen; but the Sommer Sun rising, and the Winter setting, by their owne
seuerall lines: which could by no means happen, but that the earth resteth in the centre. I

Chap. LXX.

¶ *Of the vnequall rising of the stars: of the Eclipse, both where and how it commeth.*

Now three circles there be infolded within the Zones afore named, which distinguish the
inequalities of the dayes: namely the Sommer Solstitiall Tropicke, from the highest
part of the Zodiacke in regard of vs, toward the North Clyme. And against it another
called the Winter Tropicke toward the other Southern Pole: and in like maner the Equino-
ctial, which goes in the mids of the Zodiacke circle. The cause of the rest, which wee wonder K
at, is in the figure of the very earth, which together with the water is by the same arguments
knowne to be like a globe: for so doubtlesse it commeth to passe, that with vs the stars about
the North pole neuer go downe, and those contrariwise about the Meridian neuer rise. And
againe, these here be not seene of them, by reason that the globe of the earth swelleth vp in the
mids between. Again, Trogloditine and Egypt confining next vpon it, neuer set eye vpon the
North pole stars, neither hath Italy a sight of Canopus, named also Berenices haire. Likewise
another, which vnder the Empire of *Augustus* men sirnamed *Cæsaris Thronon*: yet be they stars
there of speciall marke. And so euidently bendeth the top of the earth in the rising, that Ca-
nopus at Alexandria seemeth to the beholders eleuate aboue the earth almost one fourth part L
of a signe: but if a man looke from Rhodes, the same appeareth after a sort to touch the verie
horizon: and in Pontus, where the eleuation of the North pole is highest, not seene at all: yea,
and this same pole at Rhodes is hidden, but most in Alexandria. In Arabia all hid it is at the
first watch of the night in November, but at the second it sheweth. In Meroe, at Midsommer
in the euening it appeareth for a while; but some few daies before the rising of Arcturus seene
it is with the very dawning of the day. Sailers by their voiages finde out and know these stars
most of any other, by reason that some seas are opposite vnto some stars; but other lie flat and
incline forward to other: for that also those pole stars appeare suddenly, and rising out of the
sea, which lay hidden before vnder the winding compasse as it were of a ball. For the heauen
riseth not aloft in this higher pole, as some men haue giuen out; else should these stars be seen M
in euery place: both those that vnto the next Sailers are supposed to be higher, the same seeme
to them afarre off drowned in the sea. And like as this North pole seemeth to be aloft vnto
those that are scituate directly vnder it; so to them that be gone so far as the other deuexitie
or fall of the earth, those aboue-said starres rise vp aloft there, whiles they decline downeward
which here were mounted on high. Which thing could not possibly fall out but in the figure
of

A of a ball. And hereupon it is that the inhabitants of the East perceiue not the eclipses of Sun
or Moone in the euening, no more than those that dwell West in the morning: but those that
be at noone in the South they see very oft. At what time *Alexander* the great won that famous
victorie at Arbela, the Moone by report was eclipsed at the second houre of the night; but at
the very same time in Sicily she arose. The eclipse of the Sun, which chanced before the Ca-
lends of May, when as *Vipsanus* and *Fonteius* were Consuls (being not many yeares past) was
seene in Campania, betweene the 7 and 8 houres of the day: but *Corbulo*, a General Comman-
der then in Armenia, made report, that it was seene there betweene the tenth and 11 houres of
the same day; by reason that the compasse of the globe discouereth and hides some things to
some, and other to others. But if the earth were plaine and leuell, all things should appeare at
B once to all men; for neither should one night be longer than another, ne yet should the day of
12 houres appeare euen and equall to any, but to those that are seated in the mids of the earth,
which now in all parts agree and accord together alike.

Chap. LXXj.

¶ *What is the reason of the day light vpon earth.*

And hence it commeth, that it is neither night nor day at one time in all parts of the
world, by reason that the opposition of the globe brings night, and the round compasse
or circuit thereof discouereth the day. This is knowne by many experiments. In Africk
C and Sparne there were raised by *Hanibal* high watch-towers; and in Asia for the same feare of
rouers and pyrats, the like helpe of beacons was erected; wherein it was noted oft times, that
the fires giuing warning afore-hand (which were kindled at the sixt houre of the day) were de-
liuered by them that were farthest off in Asia at the third houre of the night. *Philonides* the cur-
rior or Post of the same *Alexander* aboue named, dispatched in 9 houres of the day 1200 stadia,
euen as far as from Sicyone to Elis: and from thence againe (albeit he went downe hill all the
way) he returned oftentimes, but not before the third houre of the night. The cause was, for
that he had the Sun with him in his first setting out to Elis, and in his returne backe to Sicy-
one he went full against it, met with it, and ere he came home ouerpassed it, leauing it in the
D West behind going from him. Which is the reason also, that they who by day light saile west-
ward in the shortest day of the yeare, rid more way than those who saile all night long at the
same time, for that the other do accompany the Sun.

Chap. LXXij.

¶ *The Gnomonicke art of the same matter: as also of the first Diall.*

Also the instruments seruing for the houres, as Quadrants and Dials, will not serue for all
places, but in euery 300 stadia, or 500 at the farthest, the shadowes that the Sun casteth
change; and therefore the shadow of the style in the Dial, called the Gnomon, in Egypt
at noone tide in the Æquinoctial day is little more in length than halfe the Gnomon. But in
E the city of Rome the shadow wanteth the ninth part of the Gnomon. In the towne Ancona it
is longer than it in a 35 part. But in Venice at the same time and houre the shadow and the
Gnomon be all one.

Chap. LXXiij.

¶ *Where and when there be no shadowes at all.*

In like manner they say, that in the towne Syene (which is aboue Alexandria 50 stadia) at
noone tide in the midst of Sommer there is no shadow at all: and for further experiment
thereof, let a pit be sunke in the ground and it will be light all ouer in euery corner. Wher-
F by it appeareth, that the Sun then is iust and directly ouer that place, as the very Zenith there-
of. Which also at the same time hapneth in India aboue the riuer Hypasis, as *Onesicratus* hath
set downe in writing. Yea and it is for certaine knowne, that in Berenice a city of the Troglo-
dites, and from thence 4820 stadia in the same countrey, at the towne of Ptolemais (which was
built at the first vpon the very banke of the Red sea, for the pleasure of chasing and hunting
of

of Elephants) the felfe fame is to be feen 45 daies before the Summer Sunfted, and as long af- G
ter, and that for 90 daies fpace all fhadowes are caft into the South. Again, in the Ifle Meroe, the capitall place of the Æthiopian nation, inhabited 5000 ſtadia from Syene vpon the Riuer Nilus, twice in the yeare the fhadowes are gon, and none at all feen; to wit, when the Sun is in the 18 degree of Taurus, and the 14 of *Leo*. In the country of the Oretes within India there is a mountaine named Maleus, neere which the fhadowes in Summer are caft into the South, and in Winter into the North. There for 15 nights and no more is the ſtar Charles-wain neere the pole to be ſeen. In the fame India at Patales (a moſt famous and frequented port) the Sun ariſeth on the right hand, and all fhadowes fall to the South, Whiles *Alexander* made abode there, *Onefcritus* a captaine of his wrot, that it was obſerued there, that the North ſtar was ſeen the firſt part only of the night: alſo in what places of India there were no fhadowes, there the H
North ſtar appeared not: and that thoſe quarters were called *Aſcia*, (*i.* without fhadow) neither keepe they any reckoning of houres there.

Chap. lxxiv.

¶ *Where twice in the yeare the ſhadowes go contrarie waies.*

But throughout all Trogliditine, *Eratoſthenes* hath written, that the ſhadowes two times in the yeare for 45 daies fall contrarie waies.

Chap. LXXV.

¶ *Where the day is longeſt, and where ſhorteſt.* I

It comes thus to paſſe, that by the variable increment of the day light, the longeſt day in Meroe doth comprehend 12 Equinoctial houres, and 8 parts of one houre aboue; but in Alexandria 14, in Italy 15, in Britaine 17: where in Sommer time the nights being light and ſhort, by infallible experience ſhew that which reaſon forceth to beleeue; namely, that at Midſummer time, as the Sun maketh his approch neere vnto the pole of the world, the places of the earth lying vnderneath hath day continually for ſix moneths, and contrariwiſe night, when the Sun is remote as far as Bruma. The which *Pythias* of Maſſiles hath written of Thule, an Iſland diſtant Northward from Britaine ſix daies ſailing. Yea, and ſome affirme the ſame of Mona, an Iſland diſtant from Camalodunum, a towne of Britaine, about 200 miles. K

Chap. LXXVI. ¶ *Of Dials and Quadrants.*

This cunning and skill of ſhadowes, named Gnonomice, *Anaximines* the Mileſian, the diſciple of *Anaximander* aboue named, inuented: and hee was the firſt alſo that ſhewed in Lacedemon the Horologe or Dial which they call Sciotericon.

Chap. LXXVII. ¶ *How the dayes are obſerued.*

The very day it ſelfe men haue after diuers manners obſerued. The Babylonians count for L.
day all the time betweene two Sun-riſings: the Athenians, betweene the ſettings. The Vmbrians from noone to noone. But all the common ſort euery where, from day light vntill it be darke. The Roman Prieſts, and thoſe that haue defined and ſet out a ciuil day, likewiſe the Egyptians and *Hipparchus*, from midnight to midnight. That the ſpaces or lights are greater or leſſe betwixt Sun riſings neere the Sunſteds, than the equinoctials, it appeareth by this, that the poſition of the Zodiake about the middle parts therof is more oblique and crooked, but toward the Sunſted more ſtreight and direct.

Chap. lxxviij.

¶ *The reaſon of the varietie and difference of ſundry Countries and Nations.* M

Hereunto we muſt ioyne ſuch things as are linked to celeſtiall cauſes. For doubtleſſe it is, that the Æthiopians by reaſon of the Sunnes vicinitie are ſcorched and tanned with the heate thereof, like to them that be aduſt and burnt, hauing their beards and buſh of haire curled. Alſo, that in the contrarie Clime of the world to it, in the frozen and icie regions

A gions the people haue white skins, haire growing long downeward, and yellow; but are fierce and cruell by reaſon of the rigorous cold aire: howbeit the one as well as the other in this mutabilitie are dull and groſſe, and the very legs do argue the temperature: for in the Æthiopians the iuice or bloud is drawne vpward againe by the naturall heate. But among the nations Septentrionall the ſame is driuen to the inferior parts, by reaſon of moiſture apt to fall downward. Here breed noiſome and hurtfull wilde beaſts; but there be ingendred creatures of ſundry and diuers ſhapes, eſpecially birds. Tall they are of bodily ſtature, as well in one part as the other: in the hot regions by the occaſionall motion of fire: in the other by the moiſt nouriſhment. But in the midſt of the earth there is an wholeſome mixture from both ſides: the whole Tract is fertill and fruitfull for all things, the habit of mens bodies of a mean and indifferent conſti-
B tution, the colour alſo ſhewing a great temperature. The faſhions and manners of the people are ciuill and gentle, their ſences cleare and lightſome, their wits pregnant and capable of all things within the compaſſe of Nature: they alſo beare ſoueraigne rule, and ſway empires and monarchies, which thoſe vttermoſt nations neuer had. Yet true it is, that euen they who are out of the temperate Zones may not abide to be ſubiect, nor accommodate themſelues to theſe: for ſuch is their ſauage and brutiſh nature that it vrgeth them to liue ſolitarie by themſelues.

Chap. lxxix.

¶ *Of Earthquakes.*

C The Babylonians were of this opinion, that earthquakes and gaping chinks, and all other accidents of that nature are occaſioned by the power and influence of the planets, but of thoſe three only to which they attribute lightnings: and by this means, namely as they keepe their courſe with the Sun, or meet with him; and eſpecially when this concurrence is about the quadratures of the heauen. And ſurely if it be true which is reported of *Anaximander*, the Mileſian naturall Philoſopher, his preſcience and foreknowledge of things was excellent, and worthy of immortalitie; who, as it is ſaid, forewarned the Lacedemonians to looke wel to their city and dwelling houſes, for that there was an earthquake toward: which hapned accordingly, when not only their whole city was ſhaken, and fell downe, but alſo a great part of the
D mountain Taygetus, which bare out like to the poupe of a ſhip, broken as it were from the reſt, came down too, wholly couering the foreſaid ruines. There is reported another ſhrewd gueſſe of *Pherecydes*, who was *Pythagoras* his maſter, and the ſame likewiſe diuine and prophetical: he by drawing water out of a pit both foreſaw and alſo foretold an earthquake there. Which if they be true, how far off I pray you may ſuch men ſeeme to be from God, euen while they liue here on earth. But as for theſe things verily, I leaue it free for euery man to weigh and deeme of them according to their owne iudgement; and for mine owne part I ſuppoſe, that without all doubt the windes are the cauſe thereof. For neuer beginneth the earth to quake but when the ſea is ſtill, and the weather ſo calme withall, that the birds in their flying cannot houer and hang in the aire, by reaſon that all the ſpirit and winde which ſhould beare them vp is with-
E drawne from them: ne yet at any time, but after the windes are laid, namely when the blaſt is pent and hidden within the veines and hollow caues of the earth. Neither is this ſhaking in the earth any other thing than is thunder in the cloud; nor the gaping chinke thereof ought elſe but like the cliſt whereout the lightning breaketh, when the ſpirit incloſed within ſtrugleth and ſtirreth to go forth at libertie.

Chap. LXXX.

¶ *Of the gaping chinks of the earth.*

F After many and ſundry ſorts the earth therefore is ſhaken, and thereupon enſue wondrous effects: in one place the walls of cities are laid along: in another they be ſwallowed vp in a deepe and wide chawne: here are caſt vp mighty heaps of earth; there are let out Riuers of water, yea and ſomtimes fire doth breathe forth, and hot ſprings iſſue abroad: in another place the courſe and chanell of riuers is turned clean away and forced backward. There goeth before and commeth with it a terrible noiſe: one while a rumbling more like the lowing

and bellowing of beasts: otherwhiles it resembles a mans voice, or else the clattering and rustling of armor and weapons, beating one vpon another according to the qualitie of the matter that catcheth and receiueth the noise, or the fashion either of the hollow cranes within, or the cranny by which it passeth, whiles in a narrow way it taketh on with a more slender and whistling noise: and the same keepeth an hoarse din in winding and crooked caues, rebounding againe in hard passages; roaring in moist places, wauing and floting in standing waters, boiling and chasing against solid things. And therefore a noise is often heard without any earthquake, and neuer at any time shaketh it simply after one and the same manner, but trembles and waggeth to and fro. As for the gaping chink, sometimes it remaineth wide open, and sheweth what it hath swallowed vp; otherwhiles it closeth vp the mouth, and hideth all, and the earth is knit together so againe, as there remaine no marks and tokens to be seene: notwithstanding many times it hath deuoured cities, and drawne into it a whole tract of ground and fields. Sea coasts and maritime regions most of all other feele earthquakes. Neither are the hilly countries without this calamitie: for I my selfe haue known for certain, that the Alps and Apenine haue often trembled. In the Autumne also and Spring there happen more earthquakes than at other times, like as lightnings. And hereof it is that France and Egypt least of all other are shaken: for that in Egypt the continuall Sommer, and in France the hard Winter, is against it. In like manner, earthquakes are more rife in the night than in the day time: but the greatest vse to be in the morning and euening. Toward clay light there be many; and if by day, it is vsually about noon. They fortune also to be when the Sun and Moone are eclipsed, because then all tempests are asleepe and laid to rest. But especially, when after much raine there followes a great time of heate; or after heate store of raine.

G H I

Chap. lxxxj.

¶ *Signes of Earthquake comming.*

Sailers also haue a certaine foreknowledge thereof, and guesse not doubtfully at it, namely when the waues swel suddenly without any gale of wind, or when in the ship they are shocked with billowes shaking vnder them: then are the things seen to quake which stand in the ship as well as those in houses, and with a rustling noise giue warning before-hand. The foules likewise of the aire sit not quietly without feare. In the sky also there is signe thereof; for there goeth before an earthquake, either in day time, or soon after the Sun is gon downe, a thin streake or line as it were of a cloud, lying out in a great length. Moreouer, the water in wels and pits is more thicke and troubled than ordinary, casting out a stinking sent.

K

Chap. lxxxij.

¶ *Remedies or helps against Earthquakes toward.*

But a remedie there is for the same, such as vaults and holes in many places do yeeld: for they vent and breathe out the wind that was conceiued there before: a thing noted in certain townes, which by reason they stand hollow, and haue many sinks and vaults digged to conuey away their filth, are lesse shaken: yea, and in the same towns, those parts which be pendant be the safer: as is well seen in Naples, where that quarter thereof which is sollid and not hollow is subiect to such casualties. And in houses the arches are most safe, the angles also of walls, yea, and those posts which in shaking will jog to and fro euery way. Moreouer, walls made of brick or earth take lesse harme when they be shaken in an earthquake. And great difference there is in the very kinde and manner of earthquakes, for the motion is diuers: the safest is, when houses as they rocke keep a trembling and warbling noise: also when the earth seemeth to swell vp in rising, and again to settle down and sink with an alternatiue motion. Harme lesse it is also when houses run on end together by a contrary stroke, and butt or jur one against another; for the one moouing withstandeth the other. The bending downward in maner of waning, and a certain rolling like to surging billowes is it that is so dangerous, and doth all the mischiefe: or when the whole motion beareth and forceth it selfe to one side. These quakings or tremblings of the earth giue ouer when the winde is once vented out: but if they continue still, then they cease not vntill forty daies end, yea and many times it is longer ere they stay, for some of them haue lasted the space of a yeare or two.

L M

CHAP.

Chap. lxxxiij.

¶ *Monstrous Earthquakes seene neuer but once.*

There happned once (which I found in the books of the Tuscanes learning) within the territorie of Modena, whiles *L. Martius* and *S. Iulius* were Consuls, a great strange wonder of the earth; for two hils encountred together, charging as it were, and with violence assaulting one another, yea and retyring againe with a most mighty noise. It fell out in the day time, and between them there issued flaming fire and smoke mounting vp into the sky; while a great number of Roman Gentlemen (from the highway Æmylia) and a multitude of seruants and passengers stood and beheld it. With this conflict and running of them together all the villages vpon them were dashed and broken to pieces very much cattell that was within died therewith. And this hapned the yeare before the war of our Associates: which I doubt whether it were not more pernicious to the whole land of Italy, than the ciuil wars. It was no lesse monstrous a wonder that was knowne also in our age, in the very last yeare of *Nero* the Emperour (as we haue shewed in his acts) when medows and oliue rowes (notwithstanding the great publique port way lay betweene) passed ouerthwart one into anothers place, in the Marrucine territorie, within the lands of *Vettius Marcellus* a gentleman of Rome, Procurator vnder *Nero* in his affaires.

A B

Chap. lxxxiv.

¶ *Wonders of Earthquakes.*

There happen together with earthquakes deluges also and inundations of the sea, being infused and eatring into the earth with the same aire and wind, or else receiued into the hollow receptacle as it setleth down. The greatest earthquake in mans memory was that which chanced during the empire of *Tiberius Cæsar*, when twelue cities of Asia were laid leuell in one night. But the earthquakes came thickest in the Punick war, when in one yeare were reported to be in Rome 57. In which yeare verily, when the Carthaginians and Romans fought a battell at Thrasymenus lake, neither of both armies tooke notice of a great earthquake. Neither is this a simple euill thing, nor the danger consisteth only in the very earthquake, and no more: but that which it portendeth is as bad or worse. Neuer abode the city of Rome any earthquake, but it gaue warning thereof before hand of some strange accident and vnhappie euent following.

C D

Chap. lxxxv.

¶ *In what places the seas haue gone backe.*

The same cause is to be rendred of some new hill or piece of ground not seen before; when as the said winde within the earth, able to huffe vp the ground, was not powerful enough to breake forth and make issue. For, firme land groweth not only by that which Riuers bring in (as the Isles Echinades, which were heaped and raised vp by the riuer Achelous; and by Nilus the greater part of Egypt, into which, if wee beleeue *Homer*, from the Island Pharus there was a cut by sea of a day and a nights sailing) but also by the retiring and going backe of the sea, as the same poet hath written of the Circeiæ. The like (by report) hapned both in the bay of Ambracia for ten miles space, and also in that of the Athenians, for fiue miles, neere Piræum: also at Ephesus, where somtime the sea beate vpon the temple of *Diana*. And verily, if we giue eare to *Herodotus*, it was all a sea from aboue Memphis to the Ethyopian hills: and likewise from the plaines of Arabia. It was sea also about Ilium, and the flat of Teuthrania; and all that leuell whereas the riuer Mæander now runneth by goodly medowes.

E

Chap. lxxxvi.

¶ *The reason of Islands that newly appeare out of the sea.*

There be lands also that put forth after another manner, and all at once shew on a sudden in some sea; as if Nature cried quittance with her selfe, and made euen, paying one for another, namely by giuing againe that in one place, which those chawnes and gaping gulfes tooke away in another.

F

Chap. lxxxvij.

¶ What Iſlands haue ſprung vp, and when.

THoſe famous Iſlands long ſince, to wit, Delos and Rhodes, are recorded to haue growne out of the ſea: and afterwards others that were leſſe, namely Anaphe beyond Melos, and Nea, betweene Lemnus and Helleſpont. Alone alſo, betweene Lebedus and Teos, Thera likewiſe, and Theraſia, among the Cyclades, which ſhewed in the fourth yere of the 135 Olympias. Moreouer, among the ſame Iſles 130 yeres after, Hiera, which is the ſame that Automate. And two furlongs from it, after 110 yeares, Thia, euen in our time, vpon the 8 day before the Ides of Iuly, when *M. Iunius Syllanus* and *L. Balbus* were Conſuls.

Chap. lxxxviij.

¶ What lands the Seas haue broken in betweene.

EVen within our kenning, neere to Italy, betweene the iſles Æoliæ. In like maner neer Creta there was one ſhewed it ſelfe with hot fountaines out of the ſea, for a mile and halfe; and another in the 3 yeare of the 143 Olympias, within the Tuſcan gulf, and this burned with a violent winde. Recorded it is alſo, that when a great multitude of fiſhes floted ebbe about it, thoſe perſons died preſently that did feed thereof. So they ſay that in the Campaine gulfe the Pithecuſæ Iſlands appeared. And ſoon after, the hill Epopos in them (at what time as ſuddenly there burſt forth a flaming fire out of it) was laid leuell with the plain champion. Within the ſame alſo there was a town ſwallowed vp by the ſea: and in one earthquake there appeared a ſtanding poole; but in another, by the fall and tumbling downe of certain hills, grew the Iſland Prochyta. For after this maner alſo Nature hath made Iſlands; thus ſhe diſ-ioyned Sicily from Italy, Cyprus from Syria, Eubœa from Bœotia, Atalante and Macris from Eubœa, Bosbycus from Bithynia, Leucoſtia from the promontorie and cape of the Syrenes.

Chap. LXXXIX.

What Iſlands came to ioyne vnto the Maine.

AGaine, ſhee hath taken Iſlands from the ſea, and ioyned them to the firme land; namely, Antiſſa to Lesbos, Zephyria to Halicarnaſſus, Aethuſa to Myndus, Dromiſcos and Pern to Miletus, and Narthecuſa to the promontorie Parthenius. Hybanda, ſomtime an Iſle of Ionia, is now diſtant from the ſea 200 ſtadia. As for Syrie, Epheſus hath it now in the mid-land parts far from the ſea. So Magneſia neighbouring to it, hath Deraſitas and Sophonia. As for Epidaurus and Oricum, they are no more Iſlands at this day.

Chap. XC.

¶ What lands haue been turned wholly into ſea.

NAture hath altogether taken away certaine lands: in the firſt place, whereas now the ſea Atlanticum is, was ſometime the continent for a mighty ſpace of ground, as *Plato* ſaith. Likewiſe in our Mediterranean ſea, all men may ſee at this day how much hath beene drowned vp, to wit, Acarnania by the inward gulfe of Ambracia, Achaia within that of Corinth, Europ and Aſia within Propontis and Pontus. Ouer and beſides, the ſea hath broken through Leucas, Antirrhium, Helleſpont, and the two Boſphori.

Chap. XCI.

What lands haue ſwallowed vp themſelues.

AND now to paſſe ouer armes of the ſea and lakes; the very earth hath deuoured and buried her ſelfe: to wit, that moſt high hill Cybotus, with the towne Curites; Sipylus in Magneſia: and in the ſame place before time the moſt noble city called Tantalus; the territories of Galanis and Gamale in Phœnice, together with the very cities. Phogium alſo, a paſſing high hill in Ethiopia, as if the very ſtronds and continent were not to be truſted, but they alſo muſt worke hurt and miſchiefe.

CHAP.

Chap. XCII.

¶ What Cities haue been drowned with the ſea.

THe ſea Pontus hath ouerwhelmed Pyrrha and Antyſſa about Mæotis, Elice and Bura in the gulfe of Corinth; whereof the marks and tokens are to be ſeene in the Deep. Out of the Iſland Cea more than 30 miles of ground was loſt ſuddenly at once, with many men. In Sicily alſo the ſea came in and bare away halfe the city Thindaris, and all that Italy nurſeth betweene it and Sicily. The like it did in Bœotia and Eleuſina.

Chap. XCIII.

¶ Of the ſtrange wonders of the land.

FOr let vs ſpeake no more of Earthquakes, and what ſoeuer elſe of that kind, as of graues and ſepulchres of cities buried, and extant to be ſeen; but diſcourſe we rather of the wonders, than the miſchiefes wrought by Nature in the earth. And ſurely the ſtory of cœleſtiall things was not more hard to be declared: the wealth is ſuch of mettals and mines, in ſuch varietie, ſo rich, ſo fruitfull, riſing ſtill one vnder another for ſo many ages, notwithſtanding daily there is ſo much waſted and conſumed throughout the world, with fires, ruines, ſhipwrecks, wars, and fraudulent practiſes: yea and ſo much ſpent in ryot and ſuperfluous vanities, that it is infinite: yet ſee how many ſorts of iemmes there be ſtill, ſo painted and ſet out with colors? in precious ſtones what varieties of ſundry colours, and how beſpotted are they; and amongſt them behold the brightneſſe and white hue of ſome, excluding all elſe but onely light! The vertue and power of medicinable fountaines: the wonderfull burning ſo many hundred yeres together of fire iſſuing forth in ſo many places: the deadly dampes and exhalations in ſome places, either ſent out of pits when they are ſunke, or elſe from the very natiue ſeat and poſition of the ground; preſent death in one place to the birds and foules of the aire only (as at Soracte, in a quarter neere the city:) in other, to all other liuing creatures ſaue only man: yea and ſometimes to men alſo, as in the territories of Sinueſſa and Puteoli. Which damp holes breathing out a deadly aire ſome call *Charoneæ Scrobes*, i. *Charons* ditches. Likewiſe in the Hirpines land, that of Amſanctus, a caue neere vnto the temple of *Nephites*, wherinto as many as enter dy preſently. After the like manner at Hierapolis in Aſia there is another ſuch, hurting all that come to it, except the prieſt of *Cybele*, the great mother of the gods. In other places there be alſo caues and holes of a propheticall power; by the exhalation of which men are intoxicate and as it were drunken, and ſo foretell things to come, as at Delphi that moſt renowned Oracle. In all which things what other reaſon can any mortall man make, than the diuine power of Nature, diffuſed and ſpred through all, which breaketh forth at times in ſundry ſorts.

Chap. XCIV.

¶ Of certaine Lands that alwaies quake.

SOme parts of the earth there be that ſhake and tremble vnder mens feet as they go: namely in the territorie of the Gabians not far from Rome, there be almoſt two hundred acres of ground which tremble as horſemen ride ouer them. And the like is in the territory of Reate.

Chap. XCV.

¶ Of Iſlands euer floting and ſwimming.

CErtaine Iles are alwaies wauing and nuer ſtand ſtill, as in the countrey about Cæcubum, Reate aboue named, Mutina, and Statonia. Alſo in the lake Vadimonis, and neer the waters Cutyliæ, there is a ſhadowie darke groue which is neuer ſeen in one place a day and night together. Moreouer in Lydia, the Iſles Calanucæ are not only driuen to & fro by winds, but alſo many be ſhouted and thruſt with long poles which way a man will: a thing that ſaued

many a mans life in the war againſt *Mithridates*. There be other little ones alſo in the Riuer Nymphæus, called Saltuares or Dancers, becauſe in any conſort of Muſitians ſinging they ſtir and moue at the ſtroke of the feet, keeping time and meaſure. In the great lake of Italy, Tarquinienſis, two Ilands carry about with them groues and woods: one while they are in faſhion three ſquare, another while round, when they cloſe one to the other by the drift of winds, but neuer foure ſquare.

Chap. XCVI.

¶ In what lands it neuer raineth. Alſo many ſtrange wonders and miracles of the earth, and other Elements heaped together.

PAphos hath in it a famous temple of Venice, vpon a certain floure and altar whereof it neuer raineth. Likewiſe in Nea a towne of Troas a man ſhall neuer ſee it raine about the Image of *Minerua*. In the ſame alſo the beaſts killed in ſacrifice, if they be left there neuer putrifie. Neere to Harpaſa a towne in Aſia ſtands a rocke of ſtone of a ſtrange and wonderfull nature, lay one finger to it and it will ſtir, but thruſt at it with your whole body, it moueth not at all. Within the demy Iſland of the Tauri, and city Paraſinum, there is a kinde of earth that healeth all wounds: but about Aſſos in Troas there growes a ſtone, wherewith bodies are conſumed, and therefore is called Sarcophagus. Two hills there be neere the riuer Indus: the nature of the one is to hold faſt all manner of iron, and of the other not to abide it: wherefore if a mans ſhooe ſole be clouted with hob nailes, in the one of them a man cannot plucke away his foot, and in the other he can take no footing at all. Noted it is, that in Locri and Crotone was neuer peſtilence knowne, nor any danger by earthquake. And in Lycia euer after an earthquake it hath been faire for forty daies. In the territorie of Arda if corne be ſowed it neuer comes vp. At the altars Murtiæ in the Veientian field, likewiſe in Tuſculanum and the wood Cyminia, there be certaine places, wherein whatſoeuer is pitched into the ground, can neuer be plucked vp againe. In the Cruſtumine countrey all the hay there growing is hurtfull in the ſame place: but being once without, it is good and wholeſome.

Chap. XCVII.

¶ What is the reaſon of the reciprocall ebbe and flow of the ſeas; and where it is that they keepe no order, and are without reaſon.

OF the nature of waters much hath bin ſaid: but the ſea tide that it ſhould flow and ebbe againe is moſt maruellous of all other: the manner thereof verily is diuers, but the cauſe is in the Sun and Moon. Between two riſings of the Moone they flow twice, and twice go backe, and alwaies in the ſpace of 24 houres. And firſt as he riſeth aloft together with the world the tides ſwell, and anon again, as it goeth from the height of the Meridian line, and encline th Weſtward, they ſlake: again, as ſhe moueth from the Weſt vnder our horizon, and appieceth to the point contrarie to the Meridian, they flow, and then they are receiued backe into the ſea vntill ſhe riſe again: and neuer keepeth the tyde the ſame houre that it did the day before; for it waiteth and attendeth vpon the planet, which greedily draweth with it the ſeas, and euer riſeth to day in ſome other place than it did yeſterday. Howbeit the tides keepe iuſt the ſame time between, and hold alwaies ſix houres apiece: I meane not of euery day and night, or place indifferently, but only the equinoctial. For in regard of houres the tides of the ſea are vneuall: ſo much as by day, and night the tydes are more or leſſe one time than another: in the equinoctial only they are euen and alike in all places. A very great argument this is, full of light, to conuince that groſſe and blockiſh conceit of them who are of opinion, that the planets being vnder the earth loſe their power, and that their vertue beginneth when they are aboue only: for they ſhew their effects as well vnder as aboue the earth, as wel as the earth, which worketh in all parts. And plaine it is, that the Moone performeth her operations as well vnder the earth, as when we ſee her viſibly aloft: neither is her courſe any other beneath, then aboue our horizon. But yet the difference and alteration of the Moone is manifold, and firſt euery ſeuen daies: for whiles ſhe is new the tides be but ſmall vntill the firſt quarter: for

as ſhe groweth bigger, they flow more, but in the full they ſwell and boile moſt of all. From that time they begin again to be more milde; and in the firſt daies of the wain to the ſeuenth, the tides are equall: and againe when ſhe is diuided on the other ſide, and but halfe Moon, they increaſe greater. And in the Coniunction or the change, they are equall to the tides of the full. And euidently it appeareth, that when ſhe is Northerly, and retired higher & farther from the earth, the tides are more gentle, than when ſhe is gone Southerly; for then ſhe worketh neerer hand, and putteth forth her full power. Euery eight yere alſo, & after the hundreth reuolation of the Moone, the ſeas returne to the beginning of their motions, and to the like encreaſe and growth: by reaſon that ſhe augmenteth all things by the yerely courſe of the Sun: ſo much as in the two equinoctials they euer ſwel moſt, yet more in that of the Autumne, than the Spring: but nothing to ſpeak of in Mid-winter, & leſſe at Mid-ſummer. And yet theſe things fall not out iuſt in theſe very points and inſtants of the times which I haue named, but ſome few daies after: like as neither in the full nor in the change, but afterward: ne yet preſently ſo ſoon as the heauen either ſheweth vs the Moon in her riſing, or hideth her from vs at her ſetting, or as ſhee declineth from vs in the middle climat, but later almoſt by two equinoctial hours. For as much as the effect of all influences and operations in the heauen reach not ſo ſoon vnto the earth, as the cieſight piereeth vp to the heauen: as it appeareth by lightnings, thunders, & thunderbolts. Moreouer, all tides in the main Ocean, ouerſpread, couer, and ouerflow much more within the land, than in other ſeas beſides: either becauſe the whole and vniuerſall element is more courageous than in a part: or for that the open greatneſſe and largeneſſe thereof, feeleth more effectually the power of the Planet, working forcibly as it doth far and neere at liberty, than when the ſame is pent and reſtrained within thoſe ſtreights. Which is the cauſe that neither lakes nor little riuers ebbe and flow in like manner. *Pytheas* of Maſſiles, writeth, That aboue Brittain the tide floweth in height 80 cubits. But the more inward and Mediterranean narrow ſeas are ſhut vp within the lands, as in an hauen. Howbeit in ſome places a more ſpacious liberty there is that yeeldeth to the power and command of the Moon; for we haue many examples and experiments of them that in a calm ſea without wind and ſaile, by a ſtrange water onely, haue tided from Italy to Vtica in three daies. But theſe tides and quick motions of the ſea are found to be about the ſhores, more than in the deep maine ſea. For euen ſo in our bodies the extreme and vtmoſt parts haue a greater feeling of the beating of arteries, that is to ſay, the vitall ſpirits. Yet notwithſtanding in many firths and armes of the ſea, by reaſon of the vnlike riſings of the planets in euery coaſt, the tides are diuers, and diſagreeing in time, but not in reaſon and cauſe, as namely in the Syrtes. And yet ſome there be that haue a peculiar nature by themſelues, as the Firth Tauromenitanum, which ebbeth and floweth oftner than twice: and that either in Euboea, called likewiſe Euripus, which hath ſeuen tides to and fro in a day and a night. And the ſame tide three daies in a moneth ſtandeth ſtil, namely in the 7, 8, and 9 daies of the moons age. At Gades, the fountaine next vnto the chappell of *Hercules*, is incloſed about like a well; the which at ſometimes riſeth and falleth as the Ocean doth: at others againe it doth both, at contrary ſeaſons. In the ſame place there is another ſpring that keepeth order and time with the motions of the Ocean. On the banke of Betis there is a towne, the wells whereof as the tide floweth, do ebbe; and as it ebbeth, do flow: in the mid times betweene, they ſtirre not. Of the ſame qualitie there is one pit in the towne Hiſpalis; all the reſt be as others are. And the ſea Pontus euermore floweth and runneth out into Propontis, but the ſea neuer retireth backe againe within Pontus.

Chap. XCVIII.

¶ Maruels of the Sea.

ALl ſeas are purged and ſcoured in the full Moone; and ſome beſides at certaine times. About Meſſala and Nylæ, there is voided vpon the ſhore certaine dregges and filthineſſe like to beaſts dung: whereupon aroſe the fable, That the Sunnes oxen were there kept in ſtall. Hereunto addeth *Ariſtotle* (for I would not omit willingly any thing that I know) that no liuing creature dieth but in the reflux and ebbe of the ſea. This is obſerued much in the Ocean of France, but found onely in man by experience, true.

CHAP.

Chap. XCIX. ¶ *What power the Moone hath ouer things on Earth and in the Sea.*

BY which it is truly guessed and collected, that not in vaine the planet of the Moone is supposed to be a Spirit: for this is it that satisfieth the earth to her content: shee it is that in her approch and comming toward, filleth bodies ful; and in her retire and going away, empti eth them again. And hereupon it is, that with her growth all shell-fish wax & encrease: and those creatures which haue no bloud, them most of all do feele her spirit. Also, the bloud in men doth increase or diminish with her light more or lesse: yea the leaues of trees and the grasse for fodder (as shall be said in conuenient place) do feele the influence of her, which euermore the same pierceth, and entreth effectually into all things.

Chap. C.

¶ *Of the power of the Sun, and why the Sea is salt.*

THus by the feruent heate of the Sun all moisture is dried vp: for wee haue been taught, that this Planet is Masculine, frying and sucking vp the humidity of all things. Thus the broad and spacious sea hath the taste of salt sodden into it: or else it is, because when the sweet and thin substance thereof is sucked out from it, which the firie power of the Sun most easily draweth vp, all the tarter and more grosse parts thereof remaine behinde: and hereupon it is, that the deep water toward the bottom is sweeter and lesse brackish than that aboue in the top. And surely, this is a better and truer reason of that vnpleasant smacke and taste that it hath, than that the sea should be a sweat issuing out of the earth continually: or, because ouermuch of the dry terrene element is mingled in it without any vapour: or else because the nature of the earth infecteth the waters, as it were, with some strong medicine. We finde among rare examples and experiments, that there happened a prodigious token to *Denis* tyrant of Sicily, when he was expelled and deposed from that mightie state of his, and this it was; the sea water within one day in the hauen grew to be fresh and sweet.

Chap. CI.

¶ *In like manner of the Moones Nature*

ON the contrary, they say that the Moone is a planet Fœminine, tender & nightly, dissolueth humors, draweth the same, but carieth them not away. And this appeareth euidently by this proofe, that the carkasses of wilde beasts slain, she putrifieth by her influence, if she shine vpon them. When men also are sound asleepe, the dull nummednesse thereby gathered, she draweth vp into the head: she thaweth yce, and with a moistening breath proceeding from her, enlargeth and openeth all things. Thus you see how Natures turn is serued and supplyed, and is alwaies sufficient; whiles some stars thicken and knit the elements, others againe resolue the same. But as the Sun is fed by the salt seas, so the Moone is nourished by the fresh riuer waters.

Chap. CII.

¶ *Where the Sea is deepest.*

FAbianus saith, that the sea where is deepest, exceedeth not fifteen furlongs. Others againe do report, that in Pontus the sea is of an vnmeasurable depth, ouer against the Nation of the Coraxians, the place they call *Bathei Ponti*, whereof the bottome could neuer bee founded.

Chap. CIII.

¶ *The wonders of Waters, Fountaines and Riuers.*

OF all wonders this passeth, that certain fresh waters hard by the sea, issue & spring forth as out of pipes: for the nature of the waters also ceaseth not from strange and miraculous properties. Fresh waters run aloft the sea, as being no doubt the lighter: and therefore

fore the sea water (which naturally is heauier) vpholdeth and beareth vp whatsoeuer is brought in. Yea and amongst fresh waters, some there be that flote and glide ouer others. As for example, in the lake Fucinus, the riuer that runneth into it: in Lariis, Addua; in Verbanus, Ticinus; in Benacus, Mincius; in Seuinus, Ollius; in Lemanus lake, the riuer Rhodanus. As for this riuer beyond the Alpes, and the former in Italy, for many a mile as they passe, carry forth their owne waters from thence where they abode as strangers, and none other; and the same no larger than they brought in with them. This is reported likewise of Orontes, a riuer in Syria, and of many others. Some riuers again there be, which vpon an hatred to the sea, run euen vnder the bottom thereof; as Arethusa; a fountaine in Syracusa: wherein this is obserued, that whatsoeuer is cast into it, commeth vp againe at the riuer Alpheus, which running through Olimpia, falleth into the sea shore of Peloponnesus. There go vnder the ground, and shew aboue the ground againe, Lycus in Asia, Erasinus in Argolica, Tygris in Mesopotamia. And at Athens what things soeuer are drowned in the fountain of Æsculapius, be cast vp againe in Phalericus. Also in the Atinate plaines, the riuer that is buried vnder the earth, twentie miles off appeareth againe. So doth Timavus in the territory of Aquileia, In Asphaltites (a lake in Iury which ingenders *Bitumen*) nothing will sinke nor can be drowned, no more than in Arethusa in the greater Armenia: and the same verily, notwithstanding it be full of Nitre, breedeth and feedeth fish. In the Salentines countrey, neere the towne Manduria, there is a lake brim full: lade out of it as much water as you will, it decreaseth not; ne yet augmenteth, poure in neuer so much to it. In a riuer of the Ciconians, and in the lake Velinus in the Picene territory, if wood be throwne in, it is couered ouer with a stony barke. Also in Surius, a riuer of Colchis, the like is to be seen: insomuch, as ye shall haue very often the bark that ouergrowes it, as hard as any stone. Likewise in the riuer Silarus beyond Surrentum, not twigs onely that are dipped therein, but leaues also grow to be stones; and yet the water thereof otherwise is good and wholesome to be drunk. In the very passage and issue of Reatine meere, there growes a rocke of stone bigger and bigger by the dashing of the water. Moreouer in the red sea there be oliue trees and other shrubs, that grow vp green. There be also very many springs, which haue a wonderfull nature, for their boiling heat: yea, and that vpon the very mountains of the Alpes; and in the sea between Italy and Ænaria: as in the Firth Baianus, and the riuer Liris, and many others. For in diuers and sundry places ye may draw fresh water out of the sea, namely about the islands Chelidoniæ and Aradus: yea and in the Ocean about Gades. In the hot waters of the Padouans there grow greene herbes: in those of the Pisanes there breed frogs: and at Vetulonij in Hetruria, not far from the sea, fishes also are bread. In the territory Casinas there is a riuer called Scatebra, which is cold, and in Summer time more abounding and fuller of water than in winter: in it as also in Stymphalis of Arcadia, there breed & come forth of it little water-mice, or small Limpins. In Dodone, the fountain of *Iupiter* being exceeding chill and cold, so as it quencheth and putteth out light torches dipped therein, yet if you hold the same neere vnto it when they are extinct and put out, it setteth them on fire againe. The same spring at noon-tide euermore giueth ouer to boile, and wants water, for which cause they call it *Anapauomenos*: anon it begins to rise vntill it be midnight, and then it hath great abundance: and from that time againe it faints by little and little. In Illyricum there is a cold spring, ouer which, if ye spread any clothes, they catch a fire and burne. The fountaine of *Iupiter Hammon* in the day time is cold, all night it is seething hot. In the Troglodites countrey there is a fountaine of the Sunne, called the sweet Spring, about noon it is exceeding cold, anon by little and little it growes to be warm, but at midnight it passeth and is offensiue for heate and bitternes. The head of the Po, at noon in Summer giueth ouer, as it were, and intermits to boile, and is then euer drie. In the Island Tenedus there is a spring, which after the Sommer Sunsteed euermore from the third houre of the night vnto the sixt, doth ouerflow, And in the isle Delos, the fountain Inopus, falleth and rises after the same sort that Nilus doth, and together with it. Ouer against the riuer Timavus, there is a little Island within the sea, hauing hot wels, which ebbe and flow as the tide of the sea doth, and iust therwith. In the territory of the Pitinates beyond Apenninus, the riuer Nouanus at euery midsummertime swelles and runnes ouer the bankes, but in mid-winter is cleane dry. In the Falisc cane countrie, the water of the riuer Clitumnus makes the oxen and kine white that drinke of it. And in Bæotia, the riuer Melas maketh sheepe blacke: Cephyssus running out of the same lake, causeth them to be white: and Penius again giues them a black colour: but Xanthus neere

vnto

vnto Ilium, colloureth them reddish; and hereupon the riuer tooke that name. In the land of Pontus there is a riuer that watereth the plaines of Astace, vpon which those mares that feed, giue blacke milke for the food and sustenance of that nation. In the Reatine territorie there is a fountaine called Neminia: which, according to the springing and issuing forth out of this or that place, signifyeth the change in the price of corne and victuals. In the hauen of Brindis there is a Well, that yeeldeth vnto sailers and sea-fering-men, water, which will neuer corrupt. The water of Lincestis, called Acidula [*i.* Soure] maketh men drunken no lesse than wine. Semblably, in Paphlagonia, and in the territory of Cales. Also in the Isle Andros there is a fountaine neere the temple of Father *Bacchus*, which vpon the Nones of Ianuarie, alwaies runneth with water that tasteth like wine, as *Mulianus* verily beleeueth, who was a man that had beene thrice Consull: The name of the spring is Dios Tecnosia. Neere vnto Nonacris in Arcadia, there is the riuer Styx, differing from the other Styx neither in smell nor colour: drinke of it once, and it is present death. Also in Berosus (an hill of the Tauri) there be three fountaines, the water whereof whosoeuer drinketh, is sure to die of it, remedilesse, and yet without paine. In the Countrey of Spaine called Carrinensis, two Springs there bee that runne neere together, the one reiecteth, the other swalloweth vp all things. In the same countrey there is another water, which sheweth all fishes within it of a golden colour, but if they be once out of that water, they be like to other fishes. In the Cannensian territory, neere to the lake Larius, there is a large and broad Well, which euery houre continually, swelleth and faileth downe againe. In the Iland Sydonia before Lesbos, an hot fountaine there is that runneth onely in the Spring. The lake Sinnaus in Asia, is infected with the wormewood growing about it, and there of it tasteth. At Colophon in the vault or caue of *Apollo Clarius*, there is a gutter or trench standing full of water: they that drinke of it, shall propheſie and foretell strange things like Oracles, but they liue the shorter time for it. Riuers running backward, euen our age hath seen, in the later yeres of Prince *Nero*, as we haue related in the acts of his life. Now, that all Springs are colder in Summer than Winter, who knoweth not? as also these wonderous workes of Nature, That brasse and lead in the masse or lumpe sinke downe and are drowned, but if they be driuen out into thin plates, they flote and swim aloft: and let the weight be all one, yet some things settle to the bottome, others againe glide aboue. Moreouer, that heauie burdens and lodes be stirred and remoued with more ease in water. Likewise, that the stone Thyrreus, be it neuer so big, doth swim whole and intire: breake it once into pieces, and it sinketh. As also, that bodies newly dead, fall downe to the bottome of the warer, but if they be swollen once, they rise vp againe. Ouer and besides, that empty vessels are not so easily drawne forth of the water, as those that be full: that raine water for salt pits is better and more profitable than all other: and that salt cannot be made, vnlesse fresh water be mingled withall: that sea-water is longer before it congeale, but sooner made hot and set a seething. That in Winter the sea is hoter, and in Autumne more brackish and salt. And that all seas are made calme and still with oile: and therefore the Diuers vnder the water doe spirt and sprinkle it abroad with their mouthes because it dulceth and allaieth the vnpleasant nature thereof, and carrieth a light with it. That no snowes fall where the sea is deep. And, whereas all water runneth downeward by nature, yet Springs leape vp; euen at the very foot of Ætna, which burneth of a light fire so farre forth, as that for fiftie, yea, and an hundred miles, the waulming round bals and flakes of fire cast out sand and ashes.

Chap. ciiii.

¶ *The maruailes of fire and water iointly together, and of Maltha.*

NOw let vs relate some strange wonders of fire also, which is the fourth element of Nature. But first, out of waters. In a citie of Comagene, named Samosatis, there is a pond, yeelding forth a kinde of slimie mud (called Maltha) which will burne cleare. When it meeteth with any thing solide and hard, it sticketh to it like glew: also, if it be touched, it followeth them that flee from it. By this meanes the townesmen defended their walls, when *Lucullus* gaue the assault, and his souldiers fried and burned in their owne armours. Cast water vpon it, and yet it will burne. Experience hath taught, That earth onely will quench it.

Chap.

Chap. CV. ¶ *Of Naphtha.*

OF the like nature is Naphtha: for so is it called about Babylonia, and in the Austacenes countrey in Parthia, and it runneth in manner of liquid Bitumen. Great affinitie there is betweene the fire and it; for fire is ready to leap vnto it immediatly, if it be any thing neere it. Thus (they say) *Media* burnt her husbands concubine, by reason that her guirland annointed therewith, was caught by the fire, after she approched neere to the altars, with purpose to sacrifice.

Chap. CVI. ¶ *Of places continually burning.*

BVt amongst the wonderfull mountaines, the hill Ætna burneth alwaies in the nights: and for so long continuance of time yeeldeth sufficient matter to maintaine those fires: in winter it is full of snow, and coureth the ashes cast vp, with frosts. Neither in it alone doth Nature tyranize and shew her cruelty, threatning as she doth a general consuming of the whole earth by fire. For in Phoselis the hil Chimæra likewise burneth, and that with a continuall fire night and day. *Ctesias* of Gnidos writeth, that the fire therof is inflamed and set a burning with water, but quenched with earth. In the same Lycia the mountaines Hephæstij, being once touched and kindled with a flaming torch, do so burne out, that the very stones of the riuers, yea, and the sand in waters, are on fire withall; and the same fire is maintained with raine. They report also, that if a man make a furrow with a staffe that is set on fire by them, there follow gutters as it were of fire. In the Bactrians countrey, the top of the hill Cophantus burneth euery night. Amongst the Medians also, and the Cæstian nation, the same mountaines burneth: but principally in the very confines of Persis. At Susis verily, in a place called the white tower, out of fifteene chimnies or tunnels the fire issueth, and the greatest of them, euen in the day time carrieth fire. There is a plaine about Babylonia, in manner of a fish poole, which for the quantity of an acre of ground burneth likewise. In like sort neere the mountaine Hesperius in Æthyopia, the fields in the night time do glitter and shine like stars. The like is to be seene in the territorie of the Megapolitanes, although the field there within-forth be pleasant, and not burning the boughes and leaues of the thicke grouе aboue it. And neere vnto a warme Spring, the hollow burning furnace called *Crater Nymphæi* alwaies portendeth some fearefull misfortunes to the Apolloniates, the neighbours thereby, as *Theopompus* hath reported. It increaseth with showers of raine, and casteth out Bitumen to be compared with that fountaine or water of Styx that is not to be tasted, otherwise weaker than all Bitumen besides. But who would maruell at these things? in the mids of the sea, Hiera one of the Ætolian Islands neere to Italy burned together with the sea for certaine daies together, during the time of the allies war, vntill a solemne embassage of the Senat made expiation therefore. But that which burneth with the greatest fire of all other, is a certaine hill of the Æthyopians Thoeet Ochema, and sendeth out most parching flames in the hottest Sun-shine daies. Lo in how many places with sundry fires Nature burneth the earth.

Chap. CVII.

¶ *Wonders of fires by themselues.*

MOreouer, since the Nature of this onely element of fire is to be so fruitfull, to breed it selfe, & to grow infinitely of the least sparks; what may be thought will be the end of so many funerall fires of the earth? what a nature is that which feedeth the most greedy voracitie in the whole world without losse of it selfe? Put thereto the infinit number of stars, the mighty great Sun; moreouer, the fires in mens bodies, & those that are inbred in some stones; the attrition also of certain woods one against another; yea, and those within clouds, the verie original of lightnings. Surely, it exceedeth all miracles, that any one day should passe, & not al the world be set on a light burning fire, since that the hollow firy glasses also set opposit against the Sun beams, sooner set things a burning than any other fire. What should I speake of innumerable

merable others, which be indeed little, but yet naturally issuing out in great abundance? In the Promontorie Nymphæum there commeth forth a flaming fire out of a rock, which is set a burning with rain. The like is to be seene also at the waters called Scantiæ. But this verily is but feeble when it passeth and remoueth, neither indureth it long in any other matter. An ash there is growing ouer his fiery fountain, and couering it, which notwithstanding is alwaies green. In the territorie of Mutina there riseth vp fire also, vpon certaine set holy-daies vnto *Vulcan*. It is found written, That if a cole of fire fall down vpon the arable fields vnder Aricia, the very soile presently is on fire. In the Sabines territorie, as also in the Sidicines, stones if they be anointed or greased, will be set on a light fire. In a towne of the Salantines called Egnatia, if fire be laid vpon a certaine hallowed stone there, it will immediatly flame out. Vpon the alter of *Iuno Lacinia* standing as it doth in the open aire, the ashes lie vnmoueable and stir not, blow what stormy winds that will on euery side. Ouer and besides, there be fires seene suddenly to arise, both in waters and also about the bodies of men. *Valerius Antias* reporteth, That the lake Thrasymenus once burned all ouer: also that *Serv. Tullius* in his childehood, as he lay asleepe, had a light fire shone out of his head: likewise, as *L. Martius* made an oration in open audience to the army, after the two *Scipios*, were slain in Spain, and exhorted his soldiers to reuenge their death, his head was on a flaming fire in the same sort. More of this argument, and in better order, will we write soone hereafter. For now we exhibit and shew the maruells of all things hudled and intermingled together. But in the mean while, my mind being passed beyond the interpretation of Nature, hasteneth to leade as it were by the hand the minds also of the readers, throughout the whole world.

Chap. CVIII.

¶ *The measure of the whole earth in length and breadth.*

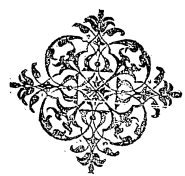
THis our part of the earth whereof I speak, floting as it were within the Ocean (as hath bin said) lieth out in length most from the East to the West, that is to say from India to *Hercules* pillars consecrated at Gades: and as mine Author *Artemidorus* thinketh, it containeth 85 hundred, & 78 miles. But according to *Isidorus*, 98 hundred, and 18. *M. Artemidorus* addeth moreouer, from Gades within the circuit of the sacred Promontorie, to the Cape Artabrum, where the front and head of Spain beareth out farthest in length 891 miles. This measure runneth two waies. From the riuer Ganges and the mouth thereof, whereas he discharged himself into the East Ocean, through India and Parthyene vnto Myriandrum a city of Syria, scituate vpon the gulfe or Firth of Isa, 52 hundred & 15 miles. From thence taking the next voiage to the Island Cyprus, to Patara in Lycia, Rhodes and Astypatæa (Islands lying in the Carpathian sea) to Tænarus in Laconia, Lilybæum in Sicilie, Calaris in Sardinia, 34 hundred & 50 miles. Then to Gades 14 hundred and 50 miles. Which measures being put al together, make in the whole from the said sea, 85 hundred 78 miles. The other way, which is more certain, lieth most open and plain by land, to wit, from Ganges to the riuer Euphrates 50 hundred miles and 21. From thence to Mazaca in Cappadocia 244 miles, & so forward through Phrygia and Caria, to Ephesus, 400 miles, 98. From Ephesus through the Ægean sea to Delos 200 miles. Then to Isthmus 212 miles. From thence partly by land, and partly by the Laconian sea and the gulfe of Corinth, to Patræ in Peloponnesus 202 miles and an halfe: so to Leucas 86 miles & a halfe, and as much to Corcyra. Then to Acroceraunia 132 miles and a halfe: to Brundusium 86 miles and a halfe: so to Rome 3 hundred miles and 60. Then to the Alpes as far as the village Cincomagus 518 miles. Through France to the Pyrenæan hils, vnto Illiberis 556 miles, to the Ocean and the sea coast of Spaine 332 miles. Then the cut ouer to Gades seuen miles and a halfe. Which measure by *Artemidorus* his account, maketh in all 86 hundred 85 miles. Now the bredth of the earth, from the Meridian or South-point, to the North, is collected to be lesse almost by the one halfe, namely, 54 hundred and 62 miles. Whereby it appeareth plainly, how much of the one side heate of fire, and on the other side frozen water hath stolne away. For I am not of minde that the earth goeth no farther than so, for then it should not haue the forme of a globe; but that the places on either side be vnhabitable, and therefore not found out and discouered. This measure runneth from the shore of the Æthyopian Ocean, which now is habited, vnto Meroe, 550 miles. From thence to Alexandria 1200 and 40 miles. So, to Rhodes 583 miles,

A miles; to Gnidus, 84 miles and a halfe; to Cos, 25 miles; to Samus, 100 miles; to Chius, 84 miles; to Mitylene, 65 miles; to Tenedos, 28 miles; to the cape Sigæum, 12 miles and a halfe; to the mouth of Pontus, 312 miles and a halfe; to Carambis the promontorie, 350 miles; to the mouth of Mæotis, 312 miles and a halfe; to the mouth of Tanais, 265 miles: which voiage may be cut shorter (with the vantage of sailing directly) by 89 miles. From the mouth of Tanais, the most curious Authors haue set downe no measure. *Artemidorus* was of opinion, that all beyond was vnfound and not discouered; confessing, that about Tanais the Sarmatian Nations do inhabit, who lie to the North pole. *Isidorus* hath added hereto twelue hundred miles, as far as to Thule: which is a iudgement of his grounded vpon bare guesse and coniecture. I take it,
B that the borders of the Sarmatians are knowne to haue no lesse space of ground than this last mentioned commeth vnto. And otherwise, how much must it be, that would containe such an innumerable company of people shifting their seats euer and anon, as they doe. Whereby I guesse, that the ouer-measure of the clime inhabitable is much greater. For I know certainely, that Germany hath discouered mightie great Islands not long since. And thus much of the length and breadth of the earth, which I thought worth the writing. Now the vniuersall compasse and circuit thereof, *Eratosthenes* (a great Clerke verily for all kinde of literature, & in this knowledge aboue all others doubtlesse most cunning, and whom I see of all men approued and allowed) hath set downe to be 252000 stadia. Which measure, by the Romanes account and reckoning, amounteth to 300 hundred and 15 hundred miles. A wonderous bold attempt of his! but yet so exquisitly calculated and contriued by him, that a shame it were not to beleeue
C him. *Hipparchus*, a wonderful man both for conuincing him, and all his other diligence besides, addeth moreouer little lesse than 25000 stadia.

Chap. CIX.

¶ *The Harmonicall measure, and Circumference of the World.*

Dionysidorus in another kind would be beleeued: (for I will not beguile you of the greatest example of Grecian vanitie.) This man was a Melian, famous for his skill in Geometrie: he dyed very aged in his owne countrey: his neere kinswomen (who by right were his
D heires in remainder) solemnized his funerals, & accompanied him to his graue. These women (as they came some few daies after to his sepulchre for to performe some solemne obsequies thereto belonging) by report, found in his monument an Epistle of this *Dionysidorus*, written in his owne name, To them aboue, that is to say, To the liuing: and to this effect, namely, That he had made a step from his sepulchre to the bottome and centre of the earth, and that it was thither 41000 stadia. Neither wanted there Geometricians, who made this interpretation, that he signified that this Epistle was sent from the middle centre of the earth, to which place downward from the vppermost aloft, the way was longest; and the same was iust halfe the diametre of the round globe: whereupon followed this computation, That they pronounced the circuit to be 255000 stadia. Now the Harmonicall proportion, which forceth this vniuersalitie and nature of the World to agree vnto it selfe, addeth vnto this measure 7000 stadia, and
E so maketh the earth to be the 96000 part of the whole world.



THE THIRD BOOKE OF THE HISTORIE OF NATVRE WRITTEN BY C. PLINIVS SECVNDVS.

The Proeme, or Preface.

Hitherto haue we written of the position and wonders of the Earth, Waters, and Starres: also we haue treated in generall termes, of the proportion and measure of the whole world. Now it followeth, to discourse of the parts thereof: albeit this also be iudged an infinite piece of worke, nor lightly can be handled without some reprehension: and yet in no kinde of enterprise pardon is more due; since it is no marueil at all, if he who is borne a mortall man, knoweth not all things belonging to man. And therefore I will not follow one Author more than another, but euery one as I shall thinke him most true in the description of each part. For asmuch as this hath been a thing common in manner to them all, namely, to leaue or describe the scituations of those places most exactly, where they selues were either borne, or which they had discouered and seene: and therefore neither will I blame nor reproue any man. The bare names of places shall be simply set downe in this my Geographie, and that with as great breuitie as I can: the excellency, as also the causes and occasions thereof, shall be deferred to their seuerall and particular treatises: for now the question is as touching the whole earth in generalitie, which mine intent is to represent vnto your eies: and therefore I would haue things thus to be taken, as if the names of countries there put downe naked, and void of renowne and fame, and such onely as they were in the beginning, before any acts were done; and as if they had indeed an indument of names, but respective onely to the World and vniuersall Nature of all.

Now the whole globe of the earth is diuided into three parts, Europe, Asia, and Africa. The beginning we take from the West and the Firth of Gades, euen where the Atlanticke Ocean breaking in, is spred into the Inland and Mediterranean seas. Make your entrance there, I meane at the Streights of Gibralter, and then Africa is on the right hand, Europe on the left, and Asia before you iust betweene. The bounds consisting these, are the riuers Tanais and Nilus. The mouth of the Ocean at Gades (whereof I spake before) lyeth out in length 15 miles, and stretcheth forth in breadth but fiue, from a village in Spaine called Mellaria, to the promontorie of Africke, called the VVhite, as Turannius Graccula born thereby, doth write. T. Liuius, and Nepos Cornelius haue reported, that the breadth thereof where it is narrowest, is seuen miles ouer, but ten miles where it is broadest. From so small a mouth (a wonder to consider) spreadeth the sea so huge and so vast as we see; and withall, so exceeding deepe, as the marueil is no lesse in that regard. For why? in the verie mouth thereof, are to be seen many barres and shallow shelues of white sands (so ebbe is the water) to the great terrour of shippes and sailers passing that way. And therefore many haue called these Streights of Gibralter, The entrie of the Mediterranean Sea. Of both sides of this gullet, neere vnto it, are two mountaines set as frontiers and rampiers to keepe all in: namely, Abila for Africke, Calpe for Europe, the vtmost end of Hercules *Labours. For which cause, the inhabitants of those parts call them, the two pillars of that God; and doe verily beleeue, that by certaine draines and ditches digged with him the Continent, the maine Ocean, before excluded, made way and was let in, to make the Mediteranean sea, where before was firme land: and so by that meanes the very face of the whole earth is cleane altered.*

CHAP.

CHAP. I.

¶ *Of Europe.*

AND first, as touching Europe, the nource of that people which is the conqueror of all nations; and besides, of all lands by many degrees most beautifull: which may for right good cause, haue made not the third portion of the earth, but the one halfe (diuiding the whole globe of the earth into two parts:) to wit, from the riuer Tanais vnto the Streights of Gades. The Ocean then, at this space aboue-said, entreth into the Atlanticke sea, and with a greedie current drowneth those
B lands which dread his comming like a tyrant; but where he meeteth with any that are like to resist, those he passeth iust by, and with his winding turns and reaches he eateth and holloweth the shore continually to gaine ground, making many nookes and creekes euery where: but in Europe most of all, wherein foure especiall great gulfes are to be seene.

Of which, the first, from Calpe the vtmost promontorie (as is aboue said) of Spain; windeth and turneth with an exceeding great compasse, to Locri, and as far as the promontorie Brutium. Within it lieth the first land of all others, Spaine; that part I meane, which in regard of vs at Rome, is the farther off, and is named also Bœtica. And anon from the Firth Virgitanus, the hither part, otherwise called Tarraconensis, as far as to the hils Pyrenæi. That farther part of larger Spaine is diuided into two prouinces in the length thereof: for on the North side of Bœ-
C tica, lyeth Lusitania afront, diuided from it by the riuer Ana.

This riuer beginneth in the territorie Laminitanus of the hither Spain, one while spreading out it selfe into broad pooles or meeres, otherwhiles gathering into narrow brooks: or altogether hidden vnder the ground, and taking pleasure to rise vp oftentimes in many places, falleth into the Spanish Atlantick Ocean. But the part named Tarraconensis, lying fast vpon Pyrenæus, & shooting along all the side thereof, and withal, stretching out it selfe ouerthwart & crosse from the Iberian sea to the Gauls Ocean, is separated from Bœtica & Lusitania, by the mountaine Salarius, and the cliffes of the Oretanes, Carpetanes, and Asturians.

Bœtica, so called of the riuer Bœtis, that cutteth in the mids, out-goeth all other prouinces
D for rich furniture, and a certaine plentifull trimnesse and peculiar beautie by it selfe. There in are held foure solemne Iudiciall great assizes and Parliaments, according to foure Counties or shires; to wit, the Gaditanc, Cordubian, Astigitane, and Hispalensis. Townes in it are all in number 175; whereof there are colonies eight; free Boroughes, eight; townes indued with the antient franchises of Latium 29: with freedome six; Confederate, foure; Tributarie paying tongue, be these vnder written: to wit, on the riuer Ana side and the Ocean coast, the citie Osonoba, surnamed also Lusturia. There run between, Luxia and Vrium, two riuers. The hils Ariani, the riuer Bœtis: the shore Corense with a winding creek. Ouer against which, lyeth Gades, to be spoken of among the Ilands. The cape or head of *Iuno*; the hauen Besippo. Townes; Belon,
E and Mellaria. The Streights or Firth out of the Atlanticke sea. Cartcia, called Tertessos by the Greekes; and the mountaine Calpe. Then, within the firm land, the towne Barbesula, with the riuer. *Item.* the towne Salbula, Suel-Malacha vpon the riuer of our Confederates. Next to these, Menoba with a riuer: Sexi-firmum, surnamed Iulium: Selaubina, Abdera, and Murgis the frontier towne of Bœtica. All that whole coast, *M. Agrippa* thought to haue had their beginning and discent from the Carthaginians. From Ana, there lyeth against the Atlanticke Ocean, the region of the Bastuli and the Turduli.

M. Varro saith, that there entered into all parts of Spain, the Herians, Persians, Phœnicians, Celtes, and Carthaginians or Africans: for *Lusus*, the companion of Father *Liber* or *Liba* (which
F *Pan* was the gouernour of it all. But those things which are reported of *Hercules* and *Pyrene*, or of *Saturne*, I thinke to be as vaine and fabulous tales as any other. As for Bœtis, in the Tarraonensian prouince, rising, not as some haue said, at the towne Mentesa, but in the chase or forrest Tugrensis, which the riuer Tader watereth, as it doth the Carthaginian pale also at Ilorcum; shunneth the funerall fire and sepulchre of *Scipio*: and turning into the West, maketh toward

the Atlantick Ocean,adopting the prouince and giuing it his owne name , is at first but small, G
howbeit receiueth many other riuers into it,from which it taketh away both their name and
their waters. And first being entred from Ossigitania into Bœtica,running gently with a plea-
sant channel,hath many townes both on the left hand & the right,seated vpon it. The most fa-
mous and populous between it & the sea coast in the Mediterranean part thereof, are Segeda,
surnamed Augurina:Iulia,which is also called Findentia:Virgao,otherwise Alba,Ebuta,other-
wise Cereolis:Illiberi,which is also Liberini:Ilipua,named likewise Laus.Artigi or Iulienses:
Vesci the same that Faventia:Singilia,Hegua,Arialdunū,Agla the lesse, Bæbro,Castra Vina-
ria,Episibrum,Hipponoua,Illurco,Osca,Escua,Succubo,Nuditanum,Tucci the old,all which
belong to Bastitania,lying toward the sea. But within the countie or iurisdiction of Corduba,
about the very riuer standeth the towne Ossigi,which is surnamed Laconicum:Illiturgi called H
also Forum Iulium. Ipasturgi the same that Triumphale,Sitia:& 14 miles within the country
Obulco,which is named Pontificense. And anon(you shall see) Ripepora,a town of the confe-
derats,Sacili,Martialium,Onoba. And on the right hand Corduba,surnamed Colonia Patritia:
and then beginneth Bœtis to be nauigable,& not before. As you go lower,you shal find towns
Carbulo,Decuma,the riuer Singulis, falling into the same side of Bœtis. The townes of the
county Hispalensis be these,Celtica,Axatiara,Arruci,Menoba,Ilipa,surnamed Italica. And on
the left hand,Hispalis a colony,surnamed likewise Romulensis. But right forward opposite to
it,the town Osset,which hath a name besides, Iulia Constantia: Vergentum,which also is the
same that Iulij Genitor,Hippo Caurasiarum,the riuer Menoba, which also entreth into Bœ-
tis on the right side. But within the washes & downs of Bœtis there is the town Nebrissa sur- I
named Veneria & Colobona:also colonies, *viz.* Asta,which is called Regia: & in the mid-land
part, Asido,which is the same that Cæsariana. The riuer Singulus breaking into Bœtis in that
order as I haue said,runneth hard by the Colony Astigitania,surnamed also Augusta Firma,&
so forward it is nauigable. The rest of the Colonies belonging to this Countie are free, & en-
joy immunitie of tribute,namely. Tucci,which is surnamed Augusta Gemella:Itucci,the same
that Virtus Iulia, Attubi all one with Claretas Iulia[*i.* excellencie of *Iulius*.] Vrso, which is
Genua Vrbanorum: & among these,Munda,which together with *Pompeies* son,was taken. Free
towns,Astigi the old,& Ostippo:tributarie,Callet,Calucula,Castra Gemina,Ilipula the lesse
Merucra,Saerana,Obulcula,Oningis. As a man commeth from the coast,neere to the riuer Me-
noba,which also will beare a ship there dwel not far off the Alontigicili, & Alostigi. But all K
that region which without the forenamed,reacheth from Bœtis to the riuer Ana,is called Be-
turia : diuided into two parts,& as many sorts of people:to wit,the Celtici,who meet with Lu-
sitania,and are within the diuision or county Hispalensis:and the Turduli,who inhabit fast vp-
on Lusitania and Tarraconensis:and they owe seruice to the County-court of Corduba: as for
the Celtici,manifest it is, That they came from the Celtiberians out of Lusitania,as appeareth
by their religion,tongue,& names of towns,which in Bætica are distinguished by their additi-
ons or surnames,to wit,Seria,which is called Fama Iulia: Vcultuniacum,which now is Curi-
ga:Laconimurgi,Constantia Iulia,Terresibus is now Fortunales,& Callensibus,Emanici.Be-
sides all these,in Celtica Acinippo,Arunda. Arunci,Turobrica,Lastigi.Alpesa, Sæpona, Se-
rippo. The other Beturia,which we said contained the Turduli,& belonged to the countie of L
Corduba,hath towns of no base account. Arsa,Mellaria and Mirobrica:and regions or quarters
Ofrutigi,and Sisapone. Within the Countie of Gades there is of Romane citizens a town cal-
led Regina : of Latines there are Læpia,Vlia,Carisa surnamed Aurelia, Vrgia, which is like-
wise named Castrum Iulium:also,Cæsaris Salutarienses. But tributaries there be these,Besaro,
Besippo,Berbesula,Lacippo,Besippo,Callet, Cappagum.Oleastro, Itucci,Prana, Lacibi, Sa-
guntia,Andorisippo. The whole length of it,*M. Agrippa* hath set down 463 miles,& the bredth
257. But for that the bounds reached forward as far as to Carthage, which cause breedeth of-
tentimes errors in the taking of the measures, whiles in one place the limits of the prouinces
were changed,and in another the paces in iourneying were either more or lesse:also,considering
the seas in so long continuance of time haue incroched here vpon the land,and the banks again M
gotten there of the sea,and beare farther in ; also, for that the reaches of the riuers haue either
turned crooked or gone streight & direct,ouer and besides, for that some haue begun to take
their measure from this place,others from that,and gon diuers waies:it is by these means come
to passe,that no twain accord together in one song,as touching their measure & Geographie.

CHAP.

A

Chap. II.

¶ *The length and bredth of Bætica.*

THe length of Bœtica at this day from the bound of the town Castulo vnto Gades, is 475 miles:and from Murgi the maritime coast or lands end,more by 22 miles. The bredth from the edge or border of Carteia,is 224 miles. And verily,who would beleeue, that *Agrippa*, a man so diligent,and in this worke principally,so curious, did erre, when he purposed to set out a map of the whole world openly to be seene of the whole city, and namely,when *Augustus Cæsar* of happie memorie,ioined with him? For he it was that finished the Porch or gallerie be-
B gun by *Agrippa's* sister, according to his will,appointment,and direction,which contained the said pourtraict.

Chap. III.

¶ *The hither or higher Spaine.*

THe old forme of the hither Spaine is somwhat changed,like as of many other prouinces: considering that *Pompey* the great in his triumphant trophies which he erected in Pyre-
næus,testifieth,That 846 townes between the Alps and the marches of the farther or low-
er Spain,were subdued by him and brought to obedience. Now,is the whole prouince diuided
C into 7 counties,the Carthaginian,the Tarraconian, Cæsar Augustani, Clunienſis, Asturia,Lu-
censis,& Bracarum. There are be sides Islands,setting aside which,without once naming them,
and excepting the cities that are annexed to others,the bare prouince containeth 294 townes.
In which there be 12 colonies,townes of Roman citizens thirteen,of old Latines seuenteen,of
allies within the league,one;tributarie,136. The first in the very frontiers thereof, be the Ba-
stulians:behind them in such order as shall be said;namely,those Inlanders that inhabit with-
in-forth,the Mentesanes,Oretanes,and the Carpetanes vpon the riuer Tagus. Neere to them,
the Vaccæans,Vectones,Celtiberians,and Arrebaci. The townes next to the marches,Vrci,and
Barea laid to Bœtica : the countrey Mauritania,then Deitania:after that Contestania,and new
Carthage,a colonie. From the promontorie whereof called *Saturnes* cape, the cut ouer the sea
D to Cæsaria a citie in Mauritania,is of 187 miles: In the residue of that coast is the riuer Ta-
der:the free colonie Illici,of which,a firth or arme of the sea tooke the name Illicitanus. To it
owe seruice and are annexed the Icositanes. Soon after,Lucentum a towne of the Latines. Dra-
nium a tributarie, the riuer Sucro, which was sometime the frontier towne of Contestania.
The region Edetania,which retireth inward to the Celtiberians, hauing a goodly pleasant
poole bordering along the front of it. Valentia,a colonie lying three miles from the sea. The
riuer Turium:and iust as far from the sea, Saguntum, a towne of Roman citizens, renowned for
their fidelitie. The riuer Idubeda,and the region of the Ilergaones. The riuer Hebre, yeelding
such riches of trafficke and commerce,by reason that it is nauigable : which beginneth in the
Cantabrians countrey,not far from the towne Inliobrica,and holdeth on his course 430 miles:
E and for 260 of them, euen from the towne Varia, carrieth vessels of merchandise : in regard
of which riuer, the Greekes named all Spaine Iberia : the region Cossetania, the riuer Su-
bi,the colonie Tarraco,built by the *Scipioes*,like as Carthage by the Africans. The countrey of
the Illergetes,the towne Subur,the riuer Rubricatum,and from thence the Lacetanes and Indi-
getes. After them in this order following:within-forth at the foot of Pyrenæus,the Ausetanes,
Itanes,& Lacetanes:and along Pyrenæus the Cerretanes,and then the Vascones. In the edge
or marches thereof,the colony Barcino,surnamed Fauentia. Towns of Roman citizens,Bætulo,
Illuro,the riuer Larnum,Blandæ:the riuer Alba,Emporiæ:two there be of these,to wit, of the
old inhabitants,and of the Greeks,who were the off-spring descended from the Phocæans. The
riuer Tichus. From whence to Pyrenæa Venus ,on the other side of the promontorie, are fortie
F miles. Now besides the forenamed,shall be related the principall places of marke as they lie
in euery countie. At Tarracon there plead in court foure and fortie States. The most famous
and of greatest name among them,be of Roman citizens the Dertusanes, and Bisgargitanes : of
Latines,the Ausetanes and Cerretanes surnamed Iulianes : they also who are named Augu-
stanes, the Sedetanes, Gerundenses, Gessarians, Tearians,the same that Inlienses. Of Tribu-

taries,the Aquicaldenſes,Onenſes,and Bætulonenſes. Cæſar Auguſta,a free colony, on which G
the riuer Iberus floweth: where the towne before was called Salduba: theſe are of the region
Sedetania,and receiueth 52 States:and among theſe, of Roman citizens the Bellitanes and
Celſenſes:and out of the Colonie,the Calaguritanes ſurnamed alſo Naſcici. The Ilerdians of
the Surdaons Nation,neere vnto whom runneth the riuer Sicoris. The Oſcians of the region
Veſcetania,and the Turiaſonenſes. Of old Latins,the Caſcantenſes,Erganicenſes,Gracchuri-
tans,Leonicenſes,Offigerdenſes. Of confederats within the league, the Tarragenſes. Tributa-
ries beſides,the Arcobricenſes,Andologenſes,Arocelitans,Burſaonenſes,Calaguritans ſurna-
med Fibularenſes,Complutenſes,Carenſes,Cincenſes,Gortonenſes,Dammanitanes, Larren-
ſes,Iturienſes,Iſpalenſes,Ilumberitanes,Lacetanes,Vibienſes,Pompelonenſes and Segienſes.
There reſort to Carthage for law 62 feuerall States,beſides the Iſlanders. Out of the colonie H
Accitana,the Gemellenſes,alſo Libiſoſona ſurnamed Foroauguſtana : which two are indued
with the franchiſes of Italy:out of the colonie Salarienſis,the Oppidans of old Latium,Caſtu-
lonenſes,whom *Cæſar* calleth *Vænales*. The Setabitanes,who are alſo Auguſtanes, and the Va-
lerricenſes. But of the Tributaries,of greateſt name be the Babanenſes,the Baſcianes,the Con-
ſaburenſes,Dianenſes,Egeleſtanes,Ilorcitani,Laminitani, Menteſami, the ſame that Oritani;
and Mentelani who otherwiſe are Baſtuli:Oretanes who alſo are called Germani,the chiefe of
the Celtiberians,the Segobrigenſes,and the Toletanes of Carpetania,dwelling vpon the riuer
Tagus. Next to them the Viacienſes and Virgilienſes. To the aſſiſes or law-court Clunienſis,
The Varduli bring 14 nations;of which I liſt to name none but the Albanenſes: but the Tur-
modigi foure,among whom are the Segiſamonenſes,Sagiſameiulienſes. To the ſame aſſiſes, I
the Carietes & the Vennenſes do go out of fiue cities,of which the Velienſes are. Thither re-
paire the Pelendones,with 4 ſtates of the Celtiberians,of whom the Numantins were famous:
like as in the 18 cities of the Vaccæans,the Intercatienſes,Pallantini,Lacobricenſes, & Cau-
cenſes:for in the foure ſtates of the Cantabrici,only Iuliobrica is named:in the 10 ſtates of the
Autrigones,Tritium,& Vironeſca. To the Areuaci the riuer Areua gaue name. Of them there
be 7 townes;to wit,Saguntia and Vxama,which names be often vſed in other places : beſides
Segouia,and Noua-auguſta,Termes,and Clunia it ſelfe the very vtmoſt bound of Celteberia,
all the reſt lie toward the Ocean,& of the abouenamed the Verduli together with the Canta-
bri. To theſe there are ioined 12 nations of the Aſtures, diuided into the Auguſtans & Tranſ-
montans,hauing a ſtately city Aſturica:among theſe are reckned, Giguri, Peſici, Lanſienſes,& K
Zoclæ. The number of the whole multitude ariſeth to 240000 pols of free men,beſides ſlaues.
The county or iuriſdiction Lucenſis compriſeth 16 towns(beſides the Celticks and Lebuni-
ans)of baſe condition,and hauing barbarous names;howbeit,of free-men to the number wel-
neere of 166000:in like maner 24 cities,which affoord 275000 pols, owe ſeruice to the court
of Bracarum:of whom beſides the Bracarians themſelues,the Vibili, Celerini, Gallæci, Æqui-
filici & Quinquerni,may be named without diſdain and contempt. The length of the hither
Spain,from Pyrenæus to the bound of Caſtulo is 607 miles,& the coaſt therof ſomwhat more
The bredth from Tarracon to the ſhore of Alarſon,307 miles : & from the foot of Pyrenæus,
where,between two ſeas it is pointed with the ſtreights,& ſo opening it ſelfe by little & little
from thence,till it come to touch the farther Spain,it is as much, and addeth ſomewhat more. L
to the bredth:all Spain throughout in manner is full of metall mines,as lead, yron, braſſe, ſil-
uer,and gold:the hither part thereof aboundeth beſides with ſtone glaſſes, or glaſſe ſtones:and
Bœtica particularly with vermilion. There be alſo there quarries of Marble. Vnto all Spaine
throughout,*Veſpaſianus Auguſtus* the Emperour, toſſed with the tempeſts and troubles of the
commonweale,granted the franchiſes of Latium. The mountaines Pyrenæi do confine Spaine
and France one from the other,lying out with their promontories into two contrary ſeas.

Chap. IIII.

¶ *The Prouince Narbonenſis.*

M
THat part of Gallia which is waſhed and beaten vpon with the Mediterranean ſea, is called
the prouince Narbonenſis,named afore-time Braccata, diuided from Italy by the riuer
Varus and the Alpes,moſt friendly mountaines to the Romane Empire: and from the
other parts of Gaule, on the North ſide,by the hills Gebenna & Iura. For tillage of the ground
for

A for reputation of men,regard of ciuilitie and manners,and for wealth,worthy to be ſet behinde
no other prouinces whatſoeuer:and in one word, to be counted Italy ,more truely than a pro-
uince:in the edge or marches thereof lyeth the countrey of the Sardaons;& within,the region
of the Conſuarones. The riuers be Tecum and Vernodubrum:the townes, Illiberis (a poore re-
lique and ſimple ſhew of a citie to that it was in old time) & Ruſcio,inhabited by the Latines.
The riuer Atax ſpringing out of Pyrenæus,runneth through the lake Rubrenſis,& floteth ouer
it. *Narbo Martius* a colonie inhabited by the Legionaries of the tenth legion, twelue miles di-
ſtant from the ſea. Rivers, Araris and Liria. Townes in the other parts,ſcattering here and there
by reaſon of pooles and meeres lying before them:namely, Agatha,in times paſt belonging to
B the Maſſilians,and the region of Volſcæ Tectoſages. Alſo,where Rhoda of the Rhodians was,
whereof Rhodanus tooke name,the moſt fruitfull riuer by far of all Gallia,running ſwiftly out
of the Alps through the lake Lemanus,& carrying with it the dead and ſlow riuer Araris; and
Iſara running as faſt as it ſelfe,together with Druentia. The two ſmal mouths or paſſages ther-
of are called Lybica:of which,the one is Hiſpanienſum,the other Metapinum: a third there is
beſides,and the ſame moſt wide and large,named Maſſalioticum. There be that write,how the
towne Heraclea likewiſe ſtood vpon the mouth of Rhodanus. Beyond the ditch out of Rhoda-
nus,which was the work of *C. Marius*,& bearing his name, there was a notable poole or meere.
Moreouer the town Aſtromela,and the maritime tract of the Auætici:and aboue it, the ſtonie
plains,carrying the memoriall of *Hercules* his battels. The region of the Anatilians,and within-
forth,of the Deſuviates and Cauians. Againe,from the ſea; Tricorum,and inward,the region of
C the Tricollivocantians,Segouellaunes,and anon of the Allobroges:but in the marches, Maſſi-
lia of Greeke Phocæans:within the league. The promontorie Citharista, Zaopa tus, and the
region of the Camatullici. After them,the Suelteri ; and aboue them, Verucines : But in the
coaſt along ſtill, Athenopolis vnder the Maſſilians, Forum Iulij a Colonie of the ninth legion
ſouldiers,which alſo is called Parenſis and Claſſica:in it is the riuer Argenteus : the region of
the Oxubij and Ligaunians;aboue whom,are the Suetri,Quarietes,and Aduricates:but in the
borders,a Latine towne Antipolis. The region of the Deciates, the riuer Varus guſhing out of
an hil of the Alpes,called Acema. In the middle part therof the Colonies, Arelate of the ſixth
legion ſouldiers, Bliteræ of the ſeuenth,and Arauſia of thoſe belonging to the ſecond. In the
territorie of the Cauians,Valentia and Vienna of the Allobroges. Latine towns, Aquæ Sextiæ
D of the Salyans,and Auenio of the Cavians, Apta Iulia of the Vulgientians, Alebecerriorum of
the Apollinares, Alba of the Heluans, Auguſta of the Tricoſtines; Anatilia, Aeria, Bormanni,
Comacina, Cabellio, Carcaſum,of the Volſcane Tectoſages: Ceſſero, Carpentoracte, of the
Menines:the Cenicenſes,Cambolecti,who are named beſides Atlantici, Forom Voconij, Gla-
num, Livij, Lutevani,who are the ſame that Foro-neronienſes. Nemauſum of the Arecomici,
Piſcenæ, Ruteni, Sanugenſes,and Toloſani,of the Tectoſages:The neighbor borderers vpon A-
quitane, Taſco-dumetari, Canonienſes, Vmbranici. Two capitall towns of the confederat ſtate
of the Vocontians, Vaſco and Lucus Auguſti. But baſe towns of no importance nineteene, as
24 more annexed to the Nemauſens,and vnder their Seignorie. To this charter or inſtrument
inrolled, *Galba* the Emperor added of the Alpine inhabitants, the Auantici and Eproduntij ;
E whoſe town is named Dima. *Agrippa* ſaith, that the length of this prouince Narbonenſis is 270
miles, and the breadth 248.

Chap. V.

¶ *Italy, Tiberis, Rome, Campania.*

NExt to them is Italy,and the firſt of all,the Ligurians : then Hetruria, Vmbria, Latium;
where be the mouthes of Tiberis and Rome the head citie of the whole earth, 16 miles
diſtant from the ſea:after it is the maritime countrey of the Volſcians, and Campania:
then Picentium, Lucanum, and Brutium, the furtheſt point in the South, vnto which from the
F crooked mountaines of the Alpes, like in manner vnto the Moone croiſſant, with ſome parts
higher, other lower, Italie ſhooteth out in length to the ſeas: from it, is the ſea coaſt of Græcia,
and ſoone after, the Salentines, Pediculi, Apuli, Peligni, Ferentani, Marrucini, Veſtines, Sa-
bines, Picentes, Gaules, Vmbrians, Thuſcanes, Venetians, Carnians, Iapides, Iſtrians, and Li-
burnians.

Neither

Neither am I ignorant; that it might be thought and that iustly, a point of an vnthankefull G
mind and idle wit hall, if briefely in this sort, and as it were by the way, that land should be spoken of which is the nource of all lands. She also is the mother, chosen by the powerfull grace of the gods, to make euen heauen it selfe more glorious; to gather into one the scattered empires, to soften and make ciuill the rude fashions of other countries; and whereas the languages of so many nations were repugnant, wilde, & sauage, to draw them together by commerce of speech, conference, and parley; to indue man with humanitie; and briefely, that of all nations in the world, there should be one onely countrey. But here, what should I do? so noble are all the places that a man shal come vnto, so excellent is euery thing, and each state so famous and renowned, that I am fully possessed with them all, and to seeke what to say. Rome citie, the only faire face therein, worthy to stand vpon so stately a necke and pair of shoulders, what worke would it H
aske thinke you, to bee set out as it ought? the very tract of Campaine by it selfe, so pleasant and goodly, so rich and happie, in what sort should it be described? So as it is plaine and manifest, that in this one place there is the workmanship of Nature wherein she ioieth and taketh delight. Now besides all this, the whole temperature of the aire is euermore so vitall, healthy, and wholesome, the fields so fertile, the hills so open to the Sun, the forrests so harmlesse, the groues so coole and shadie, the woods of all sorts so bounteous and fruitfull, the mountaines yeelding so many breathing blasts of winde; the corne, the vines, the oliues so plentifull; the sheep so inriched with fleeces of the best wooll, the bulls and oxen so fat and well fed in the necke; so many lakes and pooles, such store of riuers and springs watering it throughout; so many seas and hauens, that it is the very bosom lying open and ready to receiue the commerce I
of all lands from all parts; and yet it selfe full willingly desireth to lie far into the sea to helpe all mankinde. Neither do I speake now of the natures, wits, and fashions of the men; ne yet of the nations abroad subdued with their eloquent tongue, and strong hand. Euen the Greekes (a nation of all other most giuen to praise themselues beyond measure) haue giuen their iudgement of her, in that they called some small part thereof, Great Greece. But in good faith, that which we did in the mention of the heauen, namely, to touch some knowne planets and a few starres, the same must we likewise do in this one part: only I would pray the Readers to remember and carry this away, That I haste to rehearse euery particular thing through the whole round globe of the earth.

Well then, to begin, Italy is fashioned like for all the world to an Oke leafe, and much lar- K
ger in length than breadth: to the left side bending with the top, and ending in the figure and fashion of an Amazonian shield: and where that tract of Calabria lyeth which is called Coeinthos, it putteth forth into those two promontories or capes like the moones two hornes; the one, Leucopetra on the right hand; the other Lacinium on the left. In length it reacheth from the foot of the Alps, through Ostia or Prætoria Augusta, directly to the citie of Rome, and so forward to Capua, with a direct course leading to Rhegium a towne scituate vpon the shoulder thereof: from which beginneth the bending as it were of the necke; and beareth 1000 and 20 miles. And this measure would grow to be far more, if it went as farre as Lacinium, but that such an obliquitie and winding might seem to decline and beare out too much vnto one side. The breadth thereof is diuersly taken, namely, 410 miles between the two seas, the higher and L
the lower, and the riuers Varus and Arsia. The mids of which breadth (and that is much about the citie of Rome) from the mouth of the riuer Aternus running into the Adriaticke sea, vnto the mouthes of Tiberis, 136 miles, and somewhat lesse: from Novum Castrum by the Adriaticke sea, to Alsium, and so to the Tuscan sea: and in no place exceedeth it in breadth 300 miles. But the full compasse of the whole from Varus to Arsia, is 20049 miles. Distant it is by sea from the lands round about, to wit, from Istria and Liburnia in some places 100 miles; from Epirus and Illyricum 50 miles; from Africk lesse than 200, as *Varro* affirmeth; from Sardinia, an hundred and 20 miles; from Sicilie, a mile and a halfe: from Coreyra lesse than 70; from Issa 50. It goeth along the seas, to the Meridionall line verily of the heauen; but if a man examine it exactly indeed, it lyeth betweene the Sun rising in mid-winter, and the point of the M
Noone-stead.

Now will we describe the compasse and circuit thereof, and reckon the cities; wherin I must needs protest by way of Preface, that I will follow for mine Authour *Augustus* the Emperour of famous memorie, and the description by him made of all Italy, which be diuided into 11
Regions

A Regions or Cantons. As for the maritime townes, I will set them downe in that order, as they stand, according to their vicinity one to another. But for as much as in so running a speech and hastie pen, the rest cannot possibly be so orderly described: therfore in the inland part thereof, I will follow him as he hath digested them by the letters of the Alphabet: but mentioning withall, the colonies or chiefe cities by name, which he hath deliuered in that number. Neither is it an easie matter to know throughly their positions and foundations, considering the Ingaune Ligurians (to say nothing of all the rest) were indowed with lands thirtie times, and changed their seats. To begin with the riuer Varus therfore, there offereth to our eie first the towne Nicæa, built by the Massilians: the riuer Po; the Alpes; the people within the Alpes of many
B names, but of most marke Capillati, with long haire: the towne Vediantiorum, the Citie Cemelion, or, a towne belonging to the State of the Vediantians, called Cemelion: the port of *Hercules* and *Monœchus*, and so the Ligurian coast. Of the Ligurians, the most renowned beyond the Alpes, are the Sallij, Deceates, and Oxubij: on this side, the Veneni, and descended from the Caturiges, the Vagienni, Statyelli, Vibelli, Magelli, Euburiates, Casmonates, Veliates, and those, whose townes we will declare in the next coast. The riuer Rutuba, the towne Albium Intemelium, the riuer Merula, the towne Albium Ingaunum, the port or hauen towne Vadum Sabatium, the riuer Porcifera, the towne Genua, the riuer Feritor, the Port Delphini, Tigulia: within, Segesta Tigiliorum: the riuer Macra which limiteth Liguria. Now on the back side behind all these townes aboue named, is Apenine, the highest mountain of all Italy, reaching from the Alpes with a continuall ridge of hils, to the streights of Cicilie.
C From the other side thereof to Padus, the richest riuer in all Italy, all the countrey shining with goodly faire townes, to wit, Liberna, Dertona a Colonie, Iria, Barderates, Industria, Pollentia, Carrea, which also is named Polentia, Foro Fului; the same that Valentinum, Augusta, of the Vagienni: Alba, Pompei Asta, and Aquæ Statyellorum. And this is the ninth Canton after the Geographie of *Augustus*. This coast or tract of Liguria containeth betweene the riuers Varus and Macra 211 miles. To it is adioined the 7 wherin is Hetruria from the riuer Macra: and it oftentimes changed the name. In old time the Pelasgians chased the Vmbrians from thence: and by them the Lydians did the like, of whose king, named they were Tyrrheni: but soon after, of their ceremonies in sacrificing, in the Greeks language *Thusci*. The first towne of Hetru-
D ria is Luna, famous for the hauen; then the Colonie Luca, lying from the sea and neerer vnto it is Pisæ, betweene the riuer Auser and Arnus, which took the beginning from *Pelops* and the Pisians, or Atintanians a Greeke nation. Vada Volaterranea, the riuer Cecinna. Populonium of the Tuscanes in times past, scituate only vpon this coast. After these the riuer Prille, and anon after Vmbro, nauigable, and of it tooke name: so forward the tract of Vmbria, and the port towne Telamon: Cossa Volscientium, a Colonie planted there by the people of Rome, Grauiscæ, Castrum Novum, Pyrgi, the riuer Cæretanus, and Cære it self, standing foure miles within, called Agylla by the Pelasgians who built it: Alsium and Frugenæ. The riuer Tiberis, distant from Macra 284 miles. Within-forth are these Colonies, Falisca descended from Argi, as *Cato* saith, and for distinction is called Hetruscorum. Lucus Feroniæ, Russellana. Senensis and Sutrina. As
E for the rest, these they be, Aretini the old, Aretini Fidentes, Aretini Iulienses, Amitinenses. Aquenses surnamed Taurini: Vlerani, Cortonenses, Capenates, Clusines the old, Clusines the new, Fluentini, fast vpon the riuer Arnus that runs before them, Fesulæ, Ferentinum, Fescennia, Hortanum, Herbanum, Nepet, Nouempagi [*i.* the nine villages] the Shire-wick called Prefecture Claudia, or Foro Clodij: Pistorucin, Perusia, Suanenses, Saturnini, who before time were called Aurinini, Sudertani, Statones, Tarquinienses, Tuscanienses, Vetulonienses, Veientani, Vesentini, Volaterrani surnamed Hetrusci and Volsinienses. In the same part lie the territories Crustuminus and Cæletranus, bearing the names of the old townes. Tiberis, beforenamed Tybris, and before that Albula, from the middest well neere of Apennine, as it lies in length, runs along the marches of the Aretines: small and shallow at the first, and not able to beare a vessell without being gathered together, as it were, by fish-pooles into a head, and so let goe at sluces:
F as Tinia and Glanis which run into him, the which are at the same passe, and require 9 daies for collection of waters, and so are kept in for running out: in case they haue no helpe of rain at al. But Tiberis by reason of the rough, stony, and rugged channell, for all that deuise, hold, on no long course together, but only for troughes, to speake more truly, than boats: & thus it doth for a hundred and fifty miles, not far from Tifernum, Perusia and Otriculum: diuiding as it passeth
Hetruria

Hetruria from the Vmbrians and Sabines: and so forth vntill anon, within thirteen miles of the citie [Rome] it parts the Veientian country from the Crustumine: and soone after the Fidenate and Latine territories from the Labicane. But besides Tinia and Glanis, he is augmented with two and forty riuers, and especially with Nar and Anio: which riuer being also it selfe nauigable, encloses Latium behind: and neuertheless so many waters and fountaines are brought thereby into the citie, whereby it is able to receiue any ships, be they neuer so great, from the Italian sea; and is the kindest marchant to conueigh all commodities growing and arising in any place of the whole world: it is the onely riuer of all others, to speake of, and more villages stand vpon it and see it, than al other riuers in what land soeuer. No riuer hath lesse liberty than it, as hauing the sides therof enclosed on both hands, & yet he is no quarreller, nor much harm doth he, albeit he hath many and those suddain swellings, and in no place more than in the very citie of Rome do his waters ouerflow: yet is he taken to be a prophet rather, and a Counsellor to giue warning, yea, and in smelling, more religious and breeding scruple, to speake a truth, than otherwise cruell and doing any great harme. Old Latium from Tiberis to Circeios, was obserued to be in length 50 miles. So small roots at the first took this Empire. The inhabitants thereof changed often, and held it, some one time, some another; to wit, the Aborigenes, Pelasgi, Aroadians, Sicilians, Auruncanes, and Rutilians. And beyond Circeios, the Volscians, Ossians, Ausonians, from whence the name of Latium did reach soone after, as farre as to the riuer Liris. In the beginning of it stands Ostia, a Colonie, brought thither and planted by a Roman king: the towne Laurentum, the groue of *Iupiter Indiges*, The riuer Numicius. and Ardea, built by *Danaë* the mother of *Perseus*. Then the Colonie Antium, sometimes Aphrodisium: Astura, the riuer and the Island. The riuer Nymphæus, Clastra Romana Circeij, in times past an Island, yea and that verily enuironed with a mighty sea (if we beleeue *Homer*) but now with a plain. A wonder it is what we are able to deliuer concerning this thing to the knowledge of men. *Theophrastus* who of strangers was the first that writ (any thing diligently) somewhat of the Romans (for *Theopompus*, before whom no man made mention at all, said only, That the citie was woon by the Gaules: and *Clitarchus* next after him, spake of nothing else but an embassage sent vnto *Alexander*) this *Theophrastus*, I say, vpon a better ground and more certaintie now than bare hearesay, hath set downe the measure of the Island Circeij to be eightie Stadia, in that booke which he wrot to *Nicodorus* the chiefe Magistrate of the Athenians, who liued in the 460 yeere after the foundation of Rome citie. What soeuer land therefore aboue tenne miles compasse lies neere about it, hath beene annexed to the Island. But after that, a yeere, another strange and wonderfull thing fell out in Italy: for not far from Circeij, there is a meere called Pomptina, which *Mutianus*, a man who had beene thrice Consull, reporteth to haue been a place wherein stood 23 cities. Then there is the riuer Vfens, vpon which standeth the towne Tarracina, called in the Volscian tongue Anxur, & where some time was the citie Amycle, destroied by serpents. After it is there the place of a caue or peak, the lake Fundanus, & the hauen Caieta. The town Formiæ named also Hormiæ, the ancient seat (as men thought) of the Læstrigones. Beyond it was the towne Pyræ, the Colonie Minturne, diuided asunder by the riuer Liris, called Clanius. The vtmost frontier towne in this part of Latium laid to the other, is Sinuessa, which as some haue said, was wont to be called Sinope. Thence comes to shew it selfe that pleasant and plentifull countrey Campania. From this vale begin the hills full of vineyards, and famous for drunkennesse, proceeding of strong wine and the liquor of the grape, commended so highly in all countries: and (as they were wont to say in old time) there was the exceeding strife between father *Liber* and dame *Ceres*. From hence the Setine and Cecubine countries spread forth: and to them ioine the Falerne and Caline. Then arise the mountaines, Massici, Gaurani and Surrentine. There the Laborium Champaine fields lie along vnder their feet, and the good wheat harueste to make fine frumentie for dainties at the table. The sea-coasts here are watered with hot fountaines, and among other commodities throughout all the sea, they beare the name for the rich purple shell fish, and other excellent fishes. In no place is there better or more kind oyle pressed out of the Oliue. And in this delightfome pleasure of mankind, the Oscians, Grecians, Vmbrians, Tuscanes, and Campanes haue striued who could yeeld best. In the skirt and edge thereof is the riuer Sauo, Vulturnum the town and riuer both, Liternum, and Cumo inhabited by Chalcidians, Misenum, the hauen Bajæ, Baule, the pooles Lucrinus and Auernus, neer vnto which was somtime the town Cimmerium. Then Puteoli, called also the Colonie Dicæarchia:

After

A After that, the plaines Phlegræi, and the meere or fenne Acherusia neere to Cumes. And vpon the very strond by the sea side Naples, a citie also of the Chalcidians, the same that Parthenope so called of the tombe of a Sirene or Meermaid: Herculanium, Pompeij: and where not farre off the mountaine Vesuvius ouerlooketh, and the riuer Sernus runneth vnder the territory of Nuceria, and within nine miles of the sea, Nuceria it selfe. Surrentum with the promontory of *Minerua*, the seat sometime of the Meermaids. From the cape Circeij lies the sea open for saile 78 miles. This is counted the first region of Italy, next Tibris, according to the description of *Augustus*. Within it are these Colonies, Capua, so called of the Champane country, Aquinum; Suessa, Venafrum, Sora, Teanum, named withall Sidicinum and Nola: the Townes be, Abellinum, Aricia, Alba Longa, Acerrani, Allifani, Atinates, Aletrinates, Anagnini, Atellani, Asulani, Arpinates, Auximates, Auellani, Alfaterni; and they who of the Latine, Hernick, and Albicane territories, are furnamed accordingly: Bouillæ, Calatiæ, Casinum, Calenum, Capitulum, Cernetum, Cernetani, who be called also Mariani. Corani descended from Dardanus the Trojane. Cubulterini, Castrimonienses, Cingulani. Fabienses, and in the mount Albane, Foro populienses. Out of the Falarne territory, Frusinates, Ferentinates, Freginates, Fraterni the old, Fraterni the new, Ficolenses, Fricolenses, Foro-Appi, Forentani; Gabini, Interramnates, Succasani, called also Lirinates, Ilionenses, Latinij, Norbani, Nementani, Prenestini, whose citie was in times past named Stephanus, Priuernates, Setini, Signini, Suessulani, Telini, Trebutini furnamed Balinienses, Tribani, Tusculani, Verulani, Veliterni, Vlubrenses, Vluernates: and aboue also Rome her self: the * other name whereof to vtter, is counted in the secret misteries of ceremonies an impious and vnlawfull thing: which after that it was abolished, and so faithfully obserued to right good purpose and for the safetie thereof, *Valerius Soranus* blurted out, and soone after abid the smart for it. I think it not amisse nor impertinent, to insert there in this very place an example of the ancient religion instituted especially for this Silence: for the goddesse *Angerona*, whose holiday is solemnly kept with sacrifices the 12 day before the Kalends of Ianuary, is represented by an Image hauing her mouth fast sealed and tied vp. This citie of Rome had 3 gates when *Romulus* left it, or rather foure (if we beleeue the most men that write thereof) The wals thereof, when the two *Vespasians*, Emperors and Censors both, to wit, the Father and *Titus* his son, took the measure, which was in the yere after the foundation of it 828, were in circuit * 13 miles and almost a quarter. It containeth within it, seuen Mountaines, and is diuided in 14 regions, and 265 crosse streets or earfours, called Compita Larium. The measure of the same equall space of ground, running from the gilden piller Milliarium, erected at the head or top of the Rom. Forum, to euery gate which are at this day 37 in number, so ye reckon once the 12 gates alwaies open, and ouerpasse 7 of the old, which are no more extant, maketh 30 miles 3 quarters and better, by a straight line: but if the measure be taken from the same Milliarium before-said, through the suburbs to the vtmost ends of the houses, and take withall the Castra Prætoria, and the pourprise of all the streets, it comes to somewhat aboue 70 miles: whereunto if a man put the height of the houses, hee may conceiue verily by it, a worthy estimate of the excellency thereof, and confesse that the statelinesse of no citie in the world could be comparable to it. Enclosed it is and fenced on the East-side, with the bank or rampier of *Tarquinius* the Proud; a wonderfull piece of worke as any other, and as excellent as the best: for he raised it full as high as the wals, in that side where the aduenue to it was most open and plaine. In other parts, defended it was and fortified with exceeding high wals, or else steepe and craggy hils, but only whereas there are buildings lye out abroad, and make as it were many petty cities. In that first region of Italy there were besides, first for Latium these faire townes of marke, Satricum, Pometia, Scaptia, Pitulum, Politorium, Tellene, Tifata, Cæmina, Ficana, Crustumerium, Ameriola, Medullia, Corniculum, Saturnia, where now Rome standeth. Antipolis, which now is Ianiculum, in one part of Rome: Antemnæ, Camerium, Collatiæ: Amiternum, Norbe, Sulmo: and with these, the States that were wont to receiue a dole of flesh in mount Albane, to wit, Albenses, Albani, Aefolani, Acienses, Abolani, Bubetani, Bolani, Casuetani, Coriolani, Fidenates, Fo-

F retij, Hortenses, Latinenses, Longulani, Manates, Marales, Mutucumenses, Munienses, Numinienses Olliculani, Octulani, Pedani, Pollustini, Querquetulani, Sicani, Sifolenses, Tolerienses, Tutienses, Vimitellarij, Velienses, Venetulani, Vicellenses. Thus yee see, how of the old Latium, there be 53 States perished and cleane gone, without any token left behinde. Moreouer, in the Campaine countrey, the towne Stabiæ continued vnto the time that *Cn. Pompeius* and *L. Carbo*

were

* Valentia.

* Some reade 30.

were Conſuls, euen vntill the laſt day of Aprill; vpon which day, *L. Silla* a lieutenant in the Allies warre, deſtroyed it vtterly: which now at this day is turned into graunges and ferme-houſes. There is decaied alſo there and come to finall ruine, Taurania. There be alſo ſome little relikes left of Caſilinum, lying at the point of the laſt gaſpe. Moreouer *Antias* writes, that Apiola a towne of the Latines, was woon by *L. Tarquinius* the King, with the Pillage whereof he began to found the Capitoll. From Surrentum, to the riuer Silarus, the Picentine countrey lay for the ſpace of 30 miles, reowned for the Tuſcanes goodly temple built by *Iaſon* in the honor of *Iuno Argiua*. Within it ſtood the townes Salernum, and Picentia. At Silarus, the third region of Italy, beginnes together with the Lucane and Brutian countries: and there alſo the inhabitants changed not a few times. For held and poſſeſſed it was by the Pelaſgi, Oenotri, Italy, Morgetes, Sicilians, people all for the moſt part of great Grecce: and laſt of all by the Lucanes deſcended from the Samnites, who had to their leader and gouernour, *Lucius*. In which ſtandeth the town Pæſtum, called by the Greeks Poſidonia: the Firth or creeke Pæſtanus, the town Helia, now Velia. The promontory Palinurum, from which creeke retired within-forth, there is a direct cut by water to the columne regia, 100 miles ouer. Next vnto this, the riuer Melphes runneth: alſo there ſtandeth the towne Buxentum, in Greeke, Pyxus, and Lard by is the riuer Laus: a towne there was likewiſe of the ſame name. And from thence beginneth the ſea coaſt of Brutium, where is to be ſeen the towne Blanda, the riuer Batum, the hauen Parthenius belonging to the Phocæans: the Firth Vibonenſis, the groue Clampetia, The towne Temſa, called of the Greeks Temeſe: and Terina held by the Croconians, and the mighty arme of the ſea, called the gulfe Terinæus: the towne Conſentia. Within-forth in a demy Iſland, the riuer Acheron, whereof the townesmen are called Acherontium. Hippo, which now we call Vibouallentia; the Port of *Hercules*, the riuer Metaurus, the towne Taurenium, the hauen of Oreſtes, and Medua: the towne Scylleum, the riuer Cratais, mother (as they ſay) to Scylla. Then after it, the columne Rhegia: the Sicilian ſtreights or narrow ſeas, and two capes one ouer-againſt the other; namely, Cænis from Italy ſide, and Pelorum from Sicily, hauing a mile and a halfe betweene them: from whence to Rhegium is 12 miles and a halfe: and ſo forward to a wood in the Apennine, called Sila; and the promontorie or cliffe called Leucopetra, 12 miles off. From which, Locri (carrying the name alſo of the promontorie Zephyrium) is from Silarus diſtant 303 miles. Here is determined the firſt gulfe of Europe, wherin be named theſe ſeas. Firſt, Atlanticum (from which the Ocean ſea breaketh in) called of ſome Magnum: the paſſage whereas it entreth, is of the Greeks called Porthmos; of vs, Fretum Gaditanum, *i.* [The ſtreights of Gebralter] when it is once entred the Spaniſh ſea, ſo farre as it beateth vpon the coaſts of Spaine: Of others, Ibericum, or Balearicum: and anon it taketh the name of Gallicum, or the French ſea, right before the prouince Narbonenſis: and after that, Ligufticum: from whence all the way to the Iſland Sicilie, it is called Tuſcum; which ſome of the Grecians terme Notium; others Tyrrhenum, put moſt of our countrimen Inferum, *i.* [The nether ſea.] Beyond Sicily as farre as to the Salentines. *Polybius* calleth it Auſonium: but *Eratoſthenes* nameth all the ſea Sardonium, that is between the mouth of the Ocean and Sardinia: and from thence to Sicilie, Tyrrhenum; and from it as far as to Creta, Siculum: from which it is hight Creticum. The Iſlands diſcouered along theſe ſeas, were theſe: The firſt of all, thoſe which the Greeks named Pityuſæ, of the Pine ſhrub or plant; but now, Ebuſus: they are both a State confederate, and a narrow arme of the ſea runneth between them; they are 42 miles ouer. From Dianeum, they lie 70 ſtadia: and ſo many are there betweene Dianeum and Carthage, by the maine land: and as much diſtance from Pityuſæ into the maine Ocean, lie the two Baleare Iſlands; and toward Sucro, Colubraria. Theſe Baleares in their warre-ſeruice vſe much the ſling; and the Greeks name them Gymneſiæ. The bigger of them is an hundred miles in length, and in circuit 380. Townes it hath of Romane citizens, Palma and Pollentia: of Latines, Cinium and Cunici: as for Bochri, it was a towne confederate. From it, the leſſer is thirtie miles off, taking in length 60 miles, and in compaſſe 160. Cities in it, be Iamno, Saniſera, and Mago. From the bigger 12 miles into the ſea, lieth the iſle Capraria, which lies in wait for all ſhipwrack: & ouer-againſt the city Palma, Menariæ, and Tiquadra, and little Annibalis. The ſoile of Ebuſus chaſeth ſerpents away, but that of Colubraria breeds them: and therefore dangerous it is for all that come into it, vnleſſe they bring with them ſome of the Ebuſian earth. The Greeks call this Iſland, Ophiuſa. Neither doth Ebuſus breed any Conies; which are ſo common in the Baleares, that they eate vp their corne.

There

A There be as it were 20 more little ones among the ſhelues of the ſea. Now in the maritime coaſt of Gallia in the very mouth of Rhodanus, there is Metina; and ſoone after, that which is called Blaſcon; and the three Stœchades, called ſo of their neighbors the Maſſilians, for the order and ranke wherein they ſtand; and they giue them euery one a ſeuerall name, to wit, Prote, Meſe (which alſo is called Pomponiana) and the third, Hypea. After them, are Sturium, Phœnice, Phila, Lero, and Lerina oueragainſt Antipolis; wherein alſo is a token or memoriall of the towne Vergaonum.

Chap. VI.

B ¶ *Of Corſica.*

In the Ligurian ſea is Corſica the Iſland, which the Greekes called Cyrnos, but nearer it is to the Tuſcan ſea; it lyeth out from the North into the South, and containeth in length an hundred and fiftie miles: in breadth for the moſt part it beareth fiftie: in circuit 323: diſtant it is from the Waſhes or Downes of Volaterræ 62 miles. Cities it hath 35: and theſe colonies, to wit, Mariana, planted there by *C. Marius*: Aleria, by Dictatour *Sylla*. On this ſide of it is Oglaſa; but within 60 miles of Corſica, there is Planaria, ſo called of the forme thereof, ſo flat it is and leuell with the ſea; and therefore deceiueth many a ſhip that runneth agrouud vpon it. Bigger than it are Vrgo and Capraria, which the Greekes called Ægilos. In like manner Ægilium & Dianium, the ſame that Artemiſia, both lying ouer-againſt the coaſt Coſanum. Other
C ſmall ones alſo, as Mænaria, Columbrarie, Venaria, Ilua, with the yron mines, in circuit a hundred miles (ten miles from Populonia) called of the Greeks, Æthalia: from it is Planaſia 39 miles off. After them, beyond the mouthes of Tybre in the Antian creeke, is Aſtura, and anon Palmaria, Sinonia, and iuſt againſt Formiæ, Pontiæ. But in the Puteolan gulfe, Pantadaria and Prochyta, ſo called, not of *Æeneas* his nource, but becauſe it was broken off by the guſhing betweene of the ſea from Ænaria. Ænaria it ſelfe tooke that name of *Æneas* his ſhips that lay in rode there, called by *Homer* Inarime, of the Greeks Pitheculſa, not for the number of Alps there, as ſome haue thought, but of the worke houſes and furnaces of potters that made earthen veſſels, as tunnes and ſuch like, to furniſh Italy with. Betweene Pauſilypus and Naples, Megaris;
D and ſoon after, eight miles from Surrentum, Capræ, renowned for the caſtle there of Prince *Tyberius*; and it beareth in compaſſe foure hundred miles. Anon you ſhall ſee Leucothea: but without your kenning lyeth Sardinia faſt vpon the Africke ſea, but leſſe than nine miles from the coaſt of Corſica: and ſtill thoſe ſtreights are made more narrow by reaſon of ſmall Iſlands, named Cuniculariæ. Likewiſe Phintonis and Foſſæ, whereof the very ſea it ſelfe is named Taphros.

Chap. VII.

¶ *Of Sardinia.*

E Sardinia on the Eaſt ſide beareth 188 miles, on the Weſt, 170, Southward, 74, and Northward 122: ſo that in all, it taketh vp the compaſſe of 560 miles. It is from the Cape of Caraleis to Africke 200 miles: from Gades it is diſtant 1400 miles. It hath two Iſlands on that ſide where the Promontorie Gorditanum ſtandeth, which be called *Hercules* Iſlands: of Suſſenſes cape ſide, Enoſis; of Caralitanum, Ficaria: ſome ſet not far from it the Iſlands Beleorides, and Collodes: and another which they call Heras Lutra, *i. Iunoes* lauer, or Hieraca. The States of greateſt name therein be the Ilienſes, Balari, and Corſi: and of the foure townes, the chiefe are inhabited by the Sulcitanes, Valentines, Neapolitans, Boſenſes, and Caralitani who are Roman infranchiſed citizens, and Norenſes. One colonie there is in it and no more, which is called, Ad Turrim Libyſonis. This iſland Sardinia, *Timæus* called (of the faſhion of a ſhooe or flipper) Sandaliotis: but *Myrſylus*, for the reſemblance of a foots-ſtep, Ichnuſa. Ouer-againſt
F the creek Pæſtanum, there is Leucaſia, called ſo of a Mere-maid or Sirene there buried: againſt Veſtia, there lie Pontia and Iſſia, both iointly called by one name Oenotides; a good preſumption and argument that Italie was poſſeſſed by the Oenotrians. And againſt Vibo, other little ones, called Ithaceſiæ, the watch townes of *Vlyſſes*.

Chap. VIII.

¶ *of Sicilie.*

BVt Sicilie excelleth all other of these Iflands, named by *Thucydides* Sicania; by many, Trinacria, or Triquetra of the triangle forme. It is in circuit (as *Agrippa* faith) 198 miles. In time past it grew to the Brutians countrey, but soone after by the gushing of the sea between, it was plucked from it, and left a Firth of 12 miles in length, and one & a half in bredth, neere vnto the columne Rhegium. Vpon this occasion of opening and cleauing in twaine, the Greekes gaue name to the town Rhegium, scituat in the edge of Italy. In this narrow sea there is a rocke called Scylla, and likewise another named Carybdis: the sea is full of whirle-pits, and both those rocks are notorious for their rage and mischiefe. The vtmost Cape or fore-land of this Island Triquetra (as we haue said) is called Pilorus, bending against Scylla toward Italy. As for Pachynum, it lieth toward Græcia, and from it is Peloponnesus distant 144 miles. Lilibæum butteth vpon Africke, and between it and the cape of *Mercury* there be 180 miles: and from the said Lilybæum to the cape of Caraleis in Sardinia 120. Now these points & promontories lye asunder one from the other in this distance. By land from Pelorus to Pachynum, 166 miles: from thence to Lilibæum 200 miles: so forward to Pelorum 170. In it, of colonies, towns, and cities, there be 72. From Pelorum side, which looketh toward the Ionian sea, yee haue the towne Messana, inhabited by enfranchised Roman citizens, and they be called Mamertini. Also the cape Drepanum, the colony Taurominium, called before-time Naxos: the riuer Asines, the mountaine Ætna, miraculous for the fires there in the night season; the hole or open chinke in the top of it is in compasse two miles and a halfe; the imbers and sparkling ashes thereof, fly hot as far as to Taurominium and Catana: but the cracking noise therof may be heard as far as to Maron, and the hils Gemellis. In this island there be also the three rocks of the Cyclops, the port of *Vlysses*, the colonie Catanæ, the riuers Symethum and Terias: within the Ile by the plains and champian fields, Læstrigonij. The towns are these, Leontini, and Megaris: and in it is the riuer Pantagies: also the colonie Syracusæ, together with the fountain Arethusa. Albeit there be other springs also in the territory of Syracusa, that yeeld water for drinke, to wit, Temenitis, Archidemia, Magæa, Cyane, and Milichre. Moreouer, the hauen Naustathmos, the riuer Elorum, the promontorie Pachynum: and on this front of Sicily, the riuer Hirminium, the towne Camarina, the riuer Helas, and town Acragas, which our countreymen haue named Agrigentum. The colony Thermæ riuers, Atys and Hypsa, the town Selinus: and next to it the cape Lilybæum, Drepana, the hill Eryx. Townes there be, Panhormum, Solus, Hymetta with the riuer Cephalœdis, Aluntium, Agathirium, Tyndaris a colony, the town Myssæ, and whence we began Pelorus: within-forth, of Latin condition and Burgeosie, the Centuripines, Netines, and Segestines. Tributaries, Assarines, Ætnenses, Agyrines, Aceslæi, and Acrenses. Bidini, Citarii, Caciritani, Drepanitani, Ergetini, Ecestienses, Erycini, Eutellini, Etini, Enguini, Gelani, Galatani, Halesines, Ennenses, Hybienses, Herbitenses, Herbessenses, Herbulonses, Halicyenses, Hadranitani, Imacarenses, Ichanenses, Ietenses, Mutustratini, Magelini, Murgentini, Mutyenses, Menanini, Naxij, Noceni, Pelini, Paropini, Phinthienses, Semellitani, Stherrini, Selinuntij, Symetij, Talarenses, Tissinenses, Triocalini, Tiracienses, Zanclei belonging to the Messenians in the streights of Sicilie. Islands there be bending to Africk, Gaulos, Melita, from Camerina 84 miles, and from Lilybeum 113: Cosyra, Hieronesus, Cæne, Galata, Lopadusa, Æthusa which others haue written Ægusa, Bucina, and 75 miles from Solus, Osteodes: and against the Paropini, Vstica. But on this side Sicilie ouer-against the riuer Metaurus, 12 miles wel-neare from Italy, 7 others called Æoliæ. These very same islands belonged sometimes to the Liparæans, and of the Greeks were called Hephæstiades, and of our men Vulcaniæ, likewise Æoliæ, because *Æolus* reigned there in the time that Illium flourished, and about the Troian war.

Chap. IX.

¶ *Of Lipara.*

LIpara with a towne of Romane citizens, called so of king *Liparus*, who succeeded *Æolus*, but before time Melogonis or Melignis, is 12 miles from Italy, and is it selfe somewhat lesse in circuit. Between this and Sicily there is another, sometime named Therasia, now Hiera,

Hiera, because it is consecrated to *Vulcan*, wherein there is a little hill that belcheth and casts vp flames of fire in the night. A third there is also, named Strongile, a mile from Lipara, lying toward the Sunne rising (wherein *Aeolus* reigned) and differeth from Lipara onely in this, that it sendeth forth more cleere flames of fire: by the smoke thereof, the people of that countrey will tell (by report) three daies before hand what windes will blow: whereupon it is commonly thought that the windes were obedient to *Aeolus*. A fourth there is besides, named Didyme, lesse than Lipara: and a fift, Ericusa: a fixt, Phœnicusa, left to feed the rest that are next to it: the last and least is Euonymus. And thus much concerning the first gulfe that diuides Europ.

Chap. X.

¶ *Of Locri, the frontier towne of Italy.*

ATLocres beginneth the front or forepart of Italy, called Magna Græcia, retiring it selfe into three creekes of the Ausonian sea, because the Ausones first inhabited thereby. It extendes 82 miles, as *Varro* testifieth. But the greater number of writers haue made but 72. In that coast there be riuers without number. But those things which are worth the writing of neere vnto Locres, be these, Sagra the riuer, and the reliques of the towne Caulon: Myssia the castle Consilium, Cerinthus, which some think to be the vtmost promontory of Italy, bearing farthest into the sea. Then follow the creeke or gulfe Scylacensu, and that which was called by the Athenians when they built it, Scylletium. Which place another creeke Tirenæus, meeting with, makes a demie Island: in which there is a port towne called Castra Anibilis: and in no place is Italy narrower, being but twenty miles broad. And therfore *Dionisius* the elder would haue there cut it off quite from the rest; and laid it to Sicilie. Riuers nauigable there be these, Cæcinos, Crotalus, Semirus, Arocha, Targines. Within forth is the towne Petilia, the mountaine Alibanus, and promontory Lacinium: before the coast whereof there is an Island tenne miles from the land, called Dioscoron, and another Calypsus, which *Homer* is supposed to haue called Ogygia. Moreouer, Tyris, Eranusa, Meloessa. And this is seuentie miles from Caulon, as *Agrippa* hath recorded.

Chap. XI.

¶ *The second Sea of Europe.*

FRom the promontory Lacinium beginneth the second sea of Europe: it takes a great winding and compasse with it, and endeth at Acroceraunium, a promontory of Epirus, from which it is seuentie miles distant. In which there sheweth it selfe the towne Croto, and the riuer Næthus. The towne Thurium betweene the two riuers, Arathis and Syoaris, where there was a towne of the same name. Likewise between Siris and Aciris there stands Heraclea sometime called Siris. Riuers, Acalandrum, Masuentum: the town Metapontum, in which the third region of Italy taketh an end. The Inlanders be of the Brutians, the Apustans only: but of Lucanes, Thoatinates, Bantines, Eburines, Grumentines, Potentines, Sontines, Sirines, Sergilanes Vrsentines, Volcentanes, vnto whom the Numestranes are ioined. Besides all these, *Cato* writes, That Thebes of the Lucanes, is cleane destroyed and gone. And *Theopompus* saith, That Pandosia was a citie of the Lucanes, wherein *Alexander* king of the Epirotes was slaine. Knit hereunto is the second region or tract of Italy, containing within it the Hirpines, Calabria, Apulia, & the Salentines within an arme of the sea, in compasse 250 miles, which is called Tarentinus of a town of the Laconians, scituate in the inmost nouke, or creek hereof: and to it was annexed and lay the maritime Colonie which there was. And distant it is from the promontory Lacinium 136 miles, putting forth Calabria like a demy Island against it. The Greeks called it Messapia of their captaines name, and before-time, Peucetia of *Peucetius*, the brother of *Oenotrus*. In the Salentine country between the two promontories, there is a 100 miles distance. The bredth of this demie Island, to wit, from Tarentum to Brindis (if you goe by land) is two and thirtie miles, but far shorter if you saile from the Hauen or Bay Sasina. The townes in the Continent from Tarentum, be Varia, furnamed Apula, Cessapia and Aletium. But in the coast of the Senones, Gallipolis, now Auxa, 62 miles from Tarentum. Two and thirtie miles off is the promontorie which they call Acra Iapygia, and here Italy runneth farthest into the sea. Then

is there the town Basta, and Hydruntum in the space of nineteen miles, to make a partition betweene the Ionian and Adriaticke seas, through which is the shortest cut into Greece ouer against the towne Apollonia, where the narrow sea running between, is not aboue fiftie miles ouer. This space between, *Pyrrhus* king of Epirus, was the first, that intending to haue a passage ouer on foot, thought to make bridges there: after him *M. Varro*, at what time as in the Pyrates warre he was Admirall of *Pompeies* fleet. But both of them were let and stopped with one care or other besides. Next to Hydrus there is Soletum, a citie not inhabited: then, Fratuertium: the hauen Tarentinus, the garrison towne Lupia, Balesium. Cælium, Brundusium fifteene miles from Hydrus, as much renowmed as any towne of Italy for the hauen, for the surer sailing, although it be the longer, and the citie of Illyricum Dyrragium is ready to receiue the ships: the passage ouer is 220 miles. Vpon Brundutium bordereth the territory of the Pædiculi. Nine young men there were of them, and as many maids, descended from the Illyrians, who begat betweene them thirteen nations. The townes of these Pædiculi, be Rhudia, Egnatia, Barion, beforetime Iapyx of *Dedalus* his sonne, who also gaue the name to Iapygia. Riuers, Pactius, and Ausidus issuing out of the Hirpine mountaines, and running by Canusium. Then followes Apulia of the Daunians, surnamed so of their leader, father in law to *Diomedes*. In which is the towne Salapia, famous for the loue of an harlot that *Anniball* cast a fancie vnto; then, Sipontum and Uria: also the riuer Cerbalus, where the Daunians take their end: the port Agasus, the cape of the mountaine Garganus, from Salentine or Iapygium 234 miles, fetching a compasse about Garganus: the hauen Garnæ, the lake Pantanus. The riuer Frento, full of Baies and Hauens, and Teanum of the Apulians. In like manner also, Larinum, Aliturnia, and the riuer Tifernus. Then commeth in the region Frentana. So there be three kindes of nations, Teani, of their leader, from the Greekes: the Lucanes subdued by *Calchas*, which quarters now the Atinates hold and occupie. Colonies of the Daunians besides the abouenamed, Luceria, and Venusia: townes, Canusium, Arpi, sometime Argos Hippium, builded by *Diomides*, but soon after called Argyrippa. There *Diomedes* vanquished and destroied the whole generation of the Monadians and Dardians, together with two cities, which grew to a merry iest by way of a by-word, Apina and Trica. The rest be more inward in the second region, to wit, one Colonie of the Hirpines called Beneuentum, changed into a more luckie name, whereas in times past it was cleaped Maleuentum: the Æculanes, Aquilonians, and Abellinates, surnamed Protropi: the Campsanes, Caudines, and Ligurians, surnamed Cornelians: as also Bebianes, Vescellanes, Deculanes, and Aletrines: Abellinates surnamed Marsi, the Atranes, Æcanes, Afellanes, Attinates, & Arpanes: the Borcanes, the Collatines, Corinenses; and famous for the ouerthrow of the Romanes there, the Cannians: the Dirines, the Metintanes, the Genusines, the Hardonians and Hyrines: the Larinates surnamed Frentanes, the metinates, and out of Garganus the Mateolanes, the Neritines, and Natines, the Rubustines, the Syluines and Strapellines, the Turmentines, the Vibinates, Venusines, and Vlurtines. Now the Inlanders of the Calabrians, the Ægirines, Apanestines and Argentines. The Butuntines and Brumbestines, the Decians, the Norbanes, the Palions, Sturnines, and Tutines. Also of Salentine midlanders, the Aletines, Basterbines, Neretines, Valentines, and Veretines.

Chap. xii.

¶ *The fourth Canton or region of Italy.*

NOw followeth the fourth region, euen of the most hardie and valiant nations of all Italy. In the coast of the Frentanes, next to Tifernus, is the riuer Tirinium, full of good hauens and harbours. The towns there, be Histonium, Buca, and Ortona, with the riuer Aternus. More within the country, are the Anxanes surnamed Frentanes: the Carentines, both higher and lower, the Lanuenses: of Marrucines, the Teatines: of Pelignians, the Corsinienses, Super-Æquani and Sulmonenses: of Marcians, the Anxantines and Atinates, the Fucentes, Lucentes, and Maruvij: of Albenses, Alba vpon the lake Fucinus: of Æquiculanes, the Cliternines and Carseolanes: of Vestines, the Augulanes, Pinnenses, Peleuinates, vnto whom are ioined the Aufinates on this side the mountaines: of Samnites, whom the Greekes called Sabellians and Saunites, The Colonie Boulanum, the old; and another surnamed Vndecumanorum, namely, inhabited by those of the eleuenth legion: the Ausidenates, Esernines, Fagisulani, Ficolenses, Sepinates,

A nates, Treuentinates: of the Sabines, the Amiternines, Curenses, Forum Decij, Forum Nouum, the Fidenates, Interamnates, Nursines, Nomentanes, Reatines, Trebulanes, syrnamed Mutuscæi, as also Suffenates, the Tiburtes, and Tarinates. In this quarter of the Æquiculæ there be perished and gone the Comines, Tadianes, Acedikes, and Alfaterni. *Gellianus* writeth, that Acippe, a towne of the Marsians, built by *Marsyas* a captaine of the Lydians, was drowned and swallowed vp by the lake Fucinus. Also *Valerian* reporteth, that a towne of the Vidicines in Picenum was vtterly ruined by the Romans. The Sabines as some haue thought were for their religion and deuout worshipping of the gods called Sevini: they dwell hard by the Veline lakes vpon moist and dewie hils. The riuer Nar draineth them dry with his hot waters of brimstone: which riuer running from thence toward Tyberis filleth it; and gliding from the hill
B Fiscellus, neere the groues of Vacuna and Reate, is hidden in the same. But from another side, the riuer Anio, beginning in the mountain of the Trebanes, bringeth with it into Tiberis three lakes of great name for their delectable pleasantnes, which gaue the name to Sublaquensis. In the Reatine territorie is the lake Cutiliæ, wherein floteth an Island; and this lake, as *M. Varro* saith, is in the very midst and centre of Italy. Beneath the Sabines lieth Latium; on the side Picenum; behinde, Vmbria; and the hills of the Apennine on either hand, do inclose as with a rampier, the Sabines.

Chap. xiii.

¶ *The fifth Region.*

C THe fift region is Picene, a Nation in times past most populous, 360000 of the Picentes were reduced vnder the protection of the people of Rome. They are descended from the Sabines, vpon a vow that they made to hold and solemnise a sacred spring. They dwelt by the riuer Aternus, where now is the territorie Adrianus, and the Colonie Adria, seuen miles from the sea. There runneth the riuer Vomanum, and there lieth the Prætutiane and Palmensis territorie: also Castrum novum, the riuer Batinum, Truentum with the riuer, the onely relique of the Liburnians remaining in Italy. More riuers there be, to wit, Alpulates, Suinum, and Heluinum, at which the Prætutian country endeth, and the Picentian beginneth. The towne Cupra, a castle of the Firmanes, and aboue it the colony Ascuum, of all Picenum the most renow-
D ned. Within standeth Nouana. In the edge or marches without are Cluana, Potentia, and Numana, built by the Sicilians. Next to those is the colony Ancona, with the promontory Cumerum lying hard vnto it, in the very elbow of the edge thereof as it bendeth, being from Garganus 183 miles. Within-forth do inhabit the Auximates, Beregranes, Cingulanes, Cuprenses syrnamed the Mountainers, Falariens, Pausulanes, Pleninenses, Ricinenses, Septempedani, Tolentinates, Triacenses, the city Saluia, and the Tollentines.

Chap. xiiii.

¶ *The sixth Region.*

E TO these adioyneth the sixt region, comprehending Vmbria and the French pale about Ariminum. At Ancona begin the French marches, by the name of Togata Gallia. The Sicilians and Liburnians possessed most part of that tract, and principally the territories, Palmensis, Prætutianus, and Adrianus. Them the Vmbrians expelled: these againe Hetruria draue out: and lastly the Gaules dispeised it. The people of Vmbria are supposed of all Italy to be of greatest antiquity, as whom men thinke to be of the Greeks named Ombri, for that in the generall deluge of the country by raine they only remained aliue. The Tuscanes are knowne to haue by war forced and woon 300 townes of theirs. At this day in the frontier of it there are the riuer Æsus, and Senogallia; the riuer Metaurus, and the colonie Fanum Fortunæ. Pisaurum also with the riuer. In the parts within, Hispellum and Tuder. In the rest, the Amerines, Attidi-
F nates, Asirinates, Arnates, and Æsinates, Camertes, Casventillanes, and Carsulanes, Dolates, sirnamed Salentines, Fulginates, Foro-flaminienses, Foro-Iulienses, named also Concubienses, Foro-Bremitiani, Foro-Sempronienses, Iguini, Interamnates, syrnamed Nartes, Meuanates, Meuainienses, and Matilicates, Narnienses, whose towne before-time was called Nequinum. Nucerines, syrnamed Fauonienses, and Camelani. The Otriculanes, and Ostranes.

The Pitualnes, with the addition of Pifuerts, as alſo others ſirnamed Mergentines, and the Pe- G
leſtines, Sentinates, Sarſinates, Spoletines, Suarranes, Seſtinates, and Suillates, Sadinates, Tre-
biates, Tuſicanes, Tifernates, named withal Tribertines, as alſo other of them diſtinguiſhed by
the name of Metaurenſes. The Veſionicates, the Vrbinates, as well they that be ſirnamed Me-
taurenſes, as others Hortenſes, the Vettionenſes, Vindenates, and Viuentanes. In this tract are
extinct the Felignates, and they who poſſeſſed Cluſiolum aboue Interamna: alſo the Sarra-
nates, with the towns Acerræ, called beſides Vafriæ, and Turceolum, the ſame that Vetriolum.
Semblably the Solinates, Suriates, Fallienates, Apiennates. There are gon alſo and cleane loſt
the Arienates with Crinouolum, alſo the Vſidicanes and Plangonſes, the Piſinates, and Cæle-
ſtines. As for Amera aboue written, *Cato* hath left in record, that it was built 964 yeres before
the war againſt *Perſeus*. H

Chap. XV.

¶ *The eighth Region.*

THe eight region is bounded with Ariminum, Padus, and Apennine. In the borders therof is the riuer Cruſtumium, the colony Ariminum, with the riuers Ariminum and Apruſa. Then the riuer Rubico, the vtmoſt limit ſomtime of Italy. After it Sapis the riuer, Vitis, and Anemo, Rauenna a towne of the Sabines, with the riuer Bedeſes, 102 miles from Ancona. And not far from the Vmbrians ſea, Butrium. Within-forth are theſe colonies, Bononie, vſually called Felſina when it was the head city of Hetruria, Brixillum, Mutina, Parma, Placentia. I
Towns, Cæſena, Claterni, Forum Clodij, Liuij, and Popilij, pertaining to the Truentines: alſo [Forum] the Cornelij, Laccini, Fauentini, Fidentini, Oteſini, Padinates, Regienſes a Lepido, Solonates: alſo the forreſts Galliani, ſirnamed Aquinates, Tanetani, Veliates ſirnamed Veſteri, Regiates and Vmbranates. In this tract the Boij are conſumed, who had 112 tribes or Kindreds, as *Cato* ſaith. Likewiſe the Senones, they that tooke Rome.

Chap. XVI.

¶ *Of the riuer Padus.*

PAdus, iſſuing out of the boſome of the mountaine Veſulus, bearing vp his head aloft into K
a mighty height, runs from a maruellous ſpring worth the ſeeing, in the marches of the Ligurian Vagienni, and hiding it ſelfe within a narrow trench as it were vnder the ground and riſing vp again in the territorie of the Forovibians, is inferiour to no other riuers for excellencie. Of the Greeks it was called Eridanus, and is much ſpoken of and well knowne, for the puniſhment of *Phaeton*. It ſwelleth about the riſing of the Dog ſtar, by reaſon the ſnow is then thawed: more vnruly and rough vnto the fields thereby, than to the veſſels vpon it, howbeit it ſtealeth and carieth away nothing as his owne; but when he hath left the fields, his bountie is more ſeen by their plenty and fruitfulneſſe: from his head he holdeth on his courſe 90 miles wanting twain aboue 300. In which his paſſage he taketh in vnto him not only the nauigable riuers of the Apennine and the Alps, but huge main lakes alſo that diſcharge themſelues into L
him: ſo as in all he carieth with him into the Adriaticke ſea to the number of 30 riuers. The chiefe and moſt notorious of them all are theſe, ſent out of the ſide of Apennine; Tanarus, Trebia, Placentine, Tarus, Nicea, Gabellus, Scultenna, Rhenus. But running out of the Alpes, Stura, Morgus, Duriæ twaine, Seſſites, Ticinus, Lambrus, Addua, Olius, and Mincius. And there is not a riuer againe that in ſo little a way groweth to a greater ſtreame: for ouercharged it is and troubled with the quantitie of water, and therefore worketh it ſelfe a deepe channell heauie and hurtfull to the earth vnder it, although it be deriued and drawne into other riuers and goles, betweene Rauenna and Atium, for an hundred and twenty miles; yet becauſe hee belcheth and caſteth them out from him in ſo great aboundance, he is ſaid to make 7 ſeas. Drawn he is to Rauenna by a narrow channel, where he is called Baduſa, and in times paſt Meſſanicus. M
But the next mouth that he maketh carieth the bigneſſe of an hauen, which is named Vatreni: at the which *Claudius Cæſar* as hee came triumphant out of Britaine entred into Adria with that huge Veſſell more like a mighty great houſe than a Ship. This mouth of it was beforetime called Eridanum: of others, Spineticum, of the city Spinæ neere by, built by *Diomedes*, (as

A (as ſome thinke) with the treaſures of Delphie. There the riuer Vatrenus from out of the terri-
tory of Forum Cornelij, encreaſeth Padus. The next moneth that it hath, is Capraſiæ, then Sa-
gis, and ſo forth Volane, which before-time was called Olane. All thoſe riuers and trenches
aforeſaid, the Tuſcanes began to make firſt out of Sagis, carrying the forceable ſtreame of the
riuer acroſſe into the Atrian meeres, which are called the ſeuen ſeas, and made the famous ha-
uen of Atria a towne of the Tuſcanes; of which the Adriaticke ſea tooke the name afore-time,
which now is called Adriaticum. From thence are the full mouthes there of Carponaria and
the Foſſes Phyliſtinæ which others call Tartarus, but all ſpring out of the ouerflowing of the
Foſſe Phyliſtina, holpen with Atheſis comming out of the Tridentine Alpes, and Togiſonus
out of the territory of the Padouans: Part of them made alſo the next port Brundulum: like as
the two Medoaci and the Foſſe Clodia, make Edron. With theſe Padus mingleth it ſelfe,
B and by theſe he runneth ouer, and as it is ſaid by moſt writers, like as in Ægypt Nilus maketh
that which they call Delta, ſo it ſhapeth a triangle figure between the Alpes and the ſea coaſt,
two miles in compaſſe. A ſhame it is to runne to the Greekes for to borrow of them the Ety-
mologie and reaſon of any thing in Italy: howbeit *Metrodorus Scepſius* ſaith, That forasmuch as
about the ſpring and head of this riuer there grow many pitch trees, called in French Padus,
therefore it tooke the name Padus. Alſo, that in the Ligurian language, the riuer it ſelfe is cal-
led Bodincus, which is as much to ſay, as bottomleſſe. And to approue this reaſon and argu-
ment, there is a towne thereby called Induſtria, but by an old name Bodincomacum, where in
very deed, beginneth the greateſt deapth thereof.

C

Chap. XVII.

¶ *Italy beyond Padus, the eleuenth Region.*

NExt to it, is the region called Tranſpadana, and the eleuenth in number: all whole in the mid-land part of Italy, into which the ſeas bring in all things with fruitfull channel. The townes therein, be Vibi Forum, and Seguſta. The colonies at the foot of the Alpes, Auguſta of the Taurines, an ancient deſcent from the Ligurians: from whence Padus is nauigable. Then, Auguſta Prætoria, of the Salaſſi, neer vnto the two-fold gullets or paſſages of the Alpes, to wit, Graija and Peninæ: for men ſay, that the Carthagineans came through the one, and *Her-*
D *cules* in at the other, named Graijæ. There ſtandeth the towne Eporedia, built by the people of Rome, by direction and commandement out of the bookes of *Sibylla*. Now the Gauls in their tongue call good horſe-breakers Eporedicæ. Alſo, Vercella of the Lybici, deſcended from the Sallij: Nouaria, from the Vertacomacores: which euen at this very day is a village of the Vocontij, and not as *Cato* thinketh, of the Ligurians: of whom, the Leui and Marici built Ticinum, not far from Padus: like as the Boij comming ouer the Alpes, founded Laus Pompeia; and the Inſubrians, Millaine. That Comus and Bergomus, yea and Licini-Forum, with other nations thereabout, were of the Orobian race, *Cato* hath reported: but the firſt beginning and originall of that nation of Orobians, he confeſſeth that he knoweth not. Which notwithſtanding *Cornelius Alexander* ſheweth to haue deſcended from the Greekes; and this he gueſſeth by the in-
E terpretation of their name, which ſignifieth, Men liuing in mountaines. In this tract, Barraa towne of the Orobians is cleane deſtroyed; from whence, *Cato* ſaith, the Bergomates took their beginning; bewraying euen by their name, that they were ſeated more highly than happily. There are cleane gone and conſumed alſo the Caturiges, baniſhed perſons of the Inſubrians: likewiſe Spina, before-named. In like ſort, Melpum, a towne of ſpeciall importance for wealth; which (as *Nepos Cornelius* hath written) was by the Inſubrians, Doians, and Senones, raſed on that very day, on which *Camillus* forced Veij.

Chap. XVIII.

F ### ¶ *Venice, the tenth Region.*

NOw followeth the tenth region of Italy, Venice, lying faſt vpon the Adriaticke ſea: the riuer whereof Silis, commeth forth of the mountaines Taurisani: wherein alſo is the Towne Altinum, the riuer Liquentia iſſuing from the mountaines Opitergeni; a hauen of the ſame name: the colonie Concordia. Riuers and hauens, to wit, Romatinum, Tilauentum,

the

the greater and the leſſe: Anaſſum, whereunto Varranus runneth downe: Alſa, Natiſo, with Turrus, running faſt by Aquileia, a colony ſcituate 12 miles from the ſea. This is the region of the Carni, ioyning vnto that of the Iapides: the riuer Timauus, and the caſtle Pucinum, ſo famous for good wine. The vale and Firtu Tergeſtinus, taking name of the Colonie Tergeſte, 23 miles from Aquileia: beyond which ſix miles, is the riuer Formio, 189 miles from Rauenna: the ancient bound or limit of Italy enlarged: but at this day of Iſtria, which was ſo named of the riuer Iſter, flowing out of the riuer Danubius into Adria: and ouer againſt the ſame Iſter, the gullet or mouth of Padus alſo entreth thither: by the contrary ruſhing ſtreames of which two riuers, the ſea between both beginneth to be more milde, as many Authors haue reported, but vntruly: and *Cornelius Nepos* alſo, although he dwelt iuſt by Padus: for there is no riuer that runneth out of Danubius into the Adriaticke ſea. Deceiued (I ſuppoſe) they were becauſe the ſhip Argos went downe a riuer into the Adriaticke ſea, not far from Tergeſte: but what riuer it was, is yet vnknowne. They that will ſeeme to be more curious than their fellowes, ſay, That it was carried vpon mens ſhoulders ouer the Alpes: and that it was ſet into Iſter, and ſo into Saus, and then Nauportus (which vpon that occaſion tooke his name) which ariſeth betweene Æmona and the Alpes.

Chap. XIX.

¶ *Iſtria.*

ISTria runneth out like a demie Iſland. Some haue deliuered in writing, that it is 40 miles broad, and 122 miles about. The like they ſay of Liburnia adioyning vnto it, and of the hollow gulfe Flanaticus. But others ſay, that the compaſſe of Liburnia is 180 miles. And ſome there be againe, who haue ſet out Iapidia, as far as to the ſaid creeke Flanaticus, behind Iſtria 130 miles: and ſo haue made Liburnia in circuit 150 miles. *Tuditanus*, who ſubdued the Iſtrians, vpon his owne ſtatue there ſet this inſcription; That from Aquileia to the riuer Titius, were 200 ſtadia. The townes in Iſtria of Romane citizens, be Ægida and Parentium. A Colony there is beſides, Pola, now called Pietas Iulia; built in old time by the Colchians. It is from Tergeſte 100 miles. Soone after, ye ſee the towne Neſactium, and the riuer Arſia, the vtmoſt bound now of Italy. From Ancona to Pola there is a cut ouer the ſea of 120 miles. In the midland part of this tenth region, are theſe Colonies; Cremona, and Brixia, in the Cenomanes countrie: but in the Venetians countrie, Ateſte. Alſo the townes, Acelum, Patauium, Opitergium, Belunum, Vicetia: Mantua of the Tuſcanes is only left beyond Padus. That the Venetians were the off-ſpring of the Trojanes, *Cato* hath ſet downe in writing: alſo, that the Cenomanes neere vnto Maſſiles, dwell in the Volcians countrie. Fertines, Tridentines, and Barnenſes, are townes of Rhetia. As for Verona, it is of Rhetians, and Euganeans; but Iulienſes be of the Carnians. Then follow theſe, whom we need to vſe no curioſitie in naming; Alutruenſes, Aſſeriates, Flamonienſes, Vannienſes, & others ſurnamed Gulici: Foro Iulienſes ſurnamed Tranſpadani: Forelani, Venidates, Querqueni, Tauriſani, Togienſes, Varuani. In this tract there be periſhed in the borders, Itaminum, Pellaon, Palſicium. Of the Venetians, Atina, and Cælina: of the Carnians, Segeſte and Ocra: and of the Tauriſſi, Noreia. Alſo from Aquileia 12 miles, there was a towne quite deſtroyed by *M. Claudius Marcellus*, euen maugre the Senate, as *L. Piſo* hath recorded. In this region there be alſo ten notable lakes and riuers, either iſſuing forth of them as their children, or elſe fed and maintained by them, if ſo be they ſend them out againe, when they haue once receiued them: as Larius doth Æna, Verbanus Ticinus, Benacus Mincius, Sebinus Oſſius, Eupilius Lamber, al inhabiting and ſeated in Padus. The Alpes reach in length ten miles from the vpper ſea to the lower, as *Cælius* ſaith: *Timogenes*, two and twenty: but *Cornelius Nepos* draweth them out in breadth an hundred miles: *T. Liuius* ſaith, three thouſand ſtadia: both of them take meaſure in diuers places: for ſometime they exceed a hundred miles, where they diſioyne Germany from Italy, and in other parts they are ſo thin, that they make not full out threeſcore and ten miles; and that by the prouidence as it were of Nature. The breadth of Italy from Varus vnder the foot of them, through the ſhallowes or plaſhes of Sabatia, the Taurines, Comus, Brixia, Verona, Vicetia, Opitergium, Aquileia, Tergeſte, Pola, and Ariſtia, maketh ſeuen hundred and two miles.

CHAP.

Chap. XX.

¶ *Of the Alpes, and Alpine Nations.*

MAny nations inhabit the Alps, but thoſe of ſpeciall name from Pola to the tract of Tergeſtis, are theſe, the Secuſſes, Subocrines, Catili, Menocaleni: and neere to the Carnians thoſe who in times paſt were called Tauriſci, but now Norici. Vpon theſe there do confine the Rhetians and Vindelici, all diuided into many States. Men thinke that the Rheti are the Tuſcans progenie, driuen out by the Gaules, with their leader *Rhætus*. But leauing theſe Rhœtians, turning our breaſt and viſage to Italy, wee meet with the Euganean nations of the Alpes, who inioyed the liberty and franchiſes of the Latines, and whoſe townes *Cato* reckoneth to the number of 34. Of them, the Triumpilines, both people and lands were ſold. After them the Camuni and many ſuch were annexed to the next townſhips, and did ſeruice as homagers to them. The Lepontians and the Salaſſians, the ſame *Cato* thinketh to be of the Taurick race. But all others in manner ſuppoſe verily that the Lepontians were a reſidue left behinde of *Hercules* his traine and company; grounding vpon the interpretation of the Greek name, as hauing their bodies feaged with the Alpine ſnowes as they paſſed through: that the Graij likewiſe were of the ſame retinue; planted in the very paſſage, and inhabiting the Alps Graiæ: alſo that the Euganei were nobleſt of birth, whereupon they took their name. The head city of them is Stonos. Of thoſe Rhœtians the Vennonetes and Sarunetes, inhabit neere the heads of the riuer Rhenus. And of the Lepontians, thoſe who are called Viberi, dwel by the Spring of Rhodanus, in the ſame quarter of the Alpes. There be alſo inhabitants within the Alps, endowed with the liberty of Latium, namely, the Octodurenſes, and their neighbor borderers the Centrones, as alſo the Cottian States. The Caturiges, and thoſe from them deſcended, to wit, the Vagienni, Ligures, and ſuch as be called the Mountainers: and many kindes of the Capillati, confining vpon the Ligurian ſea. It ſeemeth not amiſſe in this place to ſet down an inſcription out of a triumphant Trophie erected in the Alps, which runneth in this forme: *Vnto the Emperour* Cæſar, *ſon of* Auguſtus *of famous memorie, Arch-Biſhop, Generall foure times, and inueſted in the ſacred authoritie of the Tribunes: the Senate and people of Rome. For that by his conduct and happie fortune, all the Alpine nations which reached from the vpper ſea to the nether, were reduced and brought vnder the Empire of the people of Rome. The Alpine nations ſubdued, are theſe, Triumpilini, Camuni, Vennonetes, Iſarci, Breuni, Naunes & Focunales. Of the Vindelici foure nations, to wit, the Conſuantes, Virucina, tes, Licates, and Catenates. The Abiſontes, Suanetes, Calucones, Brixentes, and Lepontij. Viberi, Nantuates, Seduni, Veragri, Salaci, Acitauones, Medulli, Veeni, Caturiges, Brigiani, Sogiontij, Ebrodunti, Nemaloni, Edenates, Eſubiani, Veamini, Gallitæ, Triulatti, Ecdini, Vergunium, Eguituri, Nemeturi, Oratelli, Neruſſelauni, Suetri. Now there were not reckoned among theſe the twelue Cottian States which were not vp in any hoſtility, neyet thoſe which were aſſigned to the freet ownes to enioy the burgeoiſie of Rome, by vertue of the law Pompeia.* Behold this is that Italy conſecrated to the gods, theſe are her nations, and theſe be the townes of her ſeuerall States. And more than all this, that Italy, which when *L. Æmylius Paulus* and *Caius Atilius Regulus* were Conſuls, vpon newes brought of a ſudden riſing and tumult of the Gauls, alone by it ſelfe, without any forrein aids, and euen them, without any nations beyond Padus, armed 80000 horſemen and 700000 foot. In plenty of all mettal mines it giueth place to no land whatſoeuer. But forbidden it is to dig any by an old act of the Senat, giuing expreſſe order to make ſpare of Italy.

Chap. XXI.

¶ *Illyricum.*

THe Nation of the Liburnians ioineth vnto Arſia, euen as farre as the riuer Titius. A part thereof were the Mentores, Hymani, Encheleæ, Dudini, and thoſe whom *Callimachus* nameth Pucetiæ. Now, the whole in generall is called by one name, Illyricum. The names of the nations are few of them either worthy or eaſie to be ſpoken. As for the iudiciall court of Aſſiſes at Scordona, the Iapides and foureteene States beſides of the Liburians reſort vnto. Of which it grieueth me not to name the Lacinians, Stulpinians, Burniſtes and Albonenſes. And in that Court theſe Nations following haue the libertie of Italians, to wit, the Alutæ and Flanates,

Flanates, of whom the sea or gulfe beareth the name: Lopsi, Varubarini, and the Assesiates that are exempt from all tributes; also of Islands, the Fulsinates and Curiolæ. Moreouer, along the borders and maritime coasts, beyond Nesactum, these townes; Aluona, Flauona, Tarsatica, Senia, Lopsica, Ortopula, Vegium, Argyruntum, Corinium, the city Ænona, the riuer Paus inus, & Tedanium, at which Iapida doth end. The islands lying in that gulfe, together with the townes, besides those towns aboue noted, Absirtium, Arba, Tragurium, Issa, Pharos beforetime Paros, Crexa, Gissa, Portunata, Again, within the continent, the colony Iadcron, which is from Pola 160 miles. From thence 30 miles off, the island Colentum; and 18, the mouth of the riuer Titius.

CHAP. XXII

¶ *Liburnia.*

THe end of Liburnia and beginning of Dalmatia is Scordona, which frontier towne is 12 miles from the sea, scituate vpon the said riuer Titius. Then followeth the antient countrie of the Tariores, and the castle Tariota, the Promontory Diomedis, or, as some would haue it the demy island Hyllis, taking in circuit a hundred miles: also Tragurium, inhabited by Roman citizens, well knowne for the marble there: Sicum, into which place, *Claudius* late *Cæsar*, sent the old souldiers: the Colony Salona, 222 miles from Iadera. There repaire to it for law those that are described into Decuries or tithings 382: to wit, Dalmatians 22, Decunum 239, Ditions, 69, and Mezæi 52, Sardiates: in this tract are Burnum, Mandetrium, and Tribulium, castles of name for the battels of the Romanes. There came also forth of the islands the Issæans, Collentines, Separians, and Epetines. Besides them, certaine castles, Piguntiæ and Rataneum, and Narona a colonie pertaining to the third Countie-court, 72 miles from Salona, lying hard to a riuer of the same name, and 20 miles from the sea. *M. Varro* writeth, that 89 States vsed to repaire thither for justice. Now, these only in a manner be knowne, to wit, Cerauni in 33 Tithings. Daorizi in 17, Destitiates in 103, Docleates in 34, Deretines in 14, Deremistes in 30, Dindari in 33, Glinditiones in 44, Melcomani in 24, Naresij in 102, Scirtari in 72, Siculote in 24: and the Varda i, who sometime wasted and forraied Italy, in 20 decuries and no more. Besides these, there held and possessed this tract Oenei, Partheni, Hemasini, Arthitæ & Armistæ. From the riuer Naron a hundred miles, is the colony Epidaurum. Townes of Roman citizens be these, Rhizinium, Asciniu m, Butua, Olchinium, which beforetime was called Colchinium, built by the Colchi. The riuer Drilo, and the towne vpon it, Scodra, inhabited by Roman citizens, eighteen miles from the sea. Ouer and besides, many other towns of Greece, yea & strong cities, out of all remembrance. For in that tract were the Labeates, Enderudines, Sassæi, Grabæi, and those who properly were called Illyrij, the Taulantij and Pyræi. The Promontorie Nymphæum in the coast thereof, keepeth still the name: also Lyssum a towne of Romane citizens, a hundred miles from Epidaurum.

C XXIII.

¶ *Macedonie.*

FRom Lissum is the prouince of Macedonie: the nations there, be the Partheni, and on their backe side the Dassaretes. Two mountaines of Candauia 79 miles from Dyrrhachium: but in the borders thereof, Denda, a towne of Roman citizens: also the Colonie Epidamnum, which for that vnluckie names sake was by the Romans called Dyrrhachium. The riuer Aous, named of some Æas. Apollonia, sometime a Colonie of the Corinthians, scituate within the country, seuen miles from the sea, in the marches wherof is the famous Nymphæum. The borderers inhabiting thereby, are the Amantes and Buliones. But in the very edge therof, the town Oricum built by the Colchi. Then beginneth Epirus, the mountaines Acroceraunia, at which we haue bounded this sea of Europe: as for Oricum, it is from Salentinum (a promontorie of Italy) 85 miles.

CHAP. XXIIII ¶ *Noricum.*

BEhind the Carni and Iapides, whereas the great riuer Ister runneth, the Norici ioine to the Rhæti. Their towns be Virunum, Celeia, Teurnia, Aguntum, Viana, Æmona, Claudia, Flavium, Tolvense. Vpon the Norici there lie fast the Lake Peisso, the deserts of the Boij. Howbeit, now by the colonie of the late Emperor *Claudius* of famous memorie, Salaria and the towne Scarabantia Iulia, they be inhabited and peopled.

CHAP. XXV.

¶ *Pannonia.*

THence beginneth Pannonia so fruitfull in Mast: whereas the hils of the Alps, waxing more mild and ciuil, turning through the midst of Illyricum from the North to the South, settle lower by an easie descent both on the right hand and the left. That part which regardeth the Adriatick sea, is called Dalmatia, and Illyricum aboue-named. Pannonia beneleth toward the North, and is bounded by the riuer Danubius. In it are these Colonies, Æmonia, Siscia. And these riuers of speciall name, and nauigable, run into Danubius, Draus with more violence out of the Noricke Alps; and Saus out of the Carnicke Alpes more gently, 115 miles between. As for Draus, it passeth through the Serretes, Serrapilles, Iasians, & Sandrozetes: but Saus through the Colapians and Bruci. And these be the chiefe States of that country. Moreouer, the Ariuates, Azali, Amantes, Belgites, Catari, Corneates, Araviſci, Hercuniates, Latovici, Oseriates, and Varciani. The mount Claudius, in the front whereof are the Scordisci, and vpon the back, the Taurisci. The island in Saus, Metubarris, the biggest of all the riuer islands. Besids, notable good riuers, Calapis running into Saus neere Siscia, where with a double chanell it maketh the island called Segestica: another riuer Bacuntius, running likewise into Saus, at the towne Sirmium: where is the State of the Sirmians and Amantines. Fiue & forty miles from thence Taurunum, where Saus is intermingled with Danubius. Higher aboue there run into it Valdanus and Vrpanus, and they ywis be no base and obscure riuers.

CHAP. XXVI.

¶ *Mœsia.*

VNto Pannonia ioineth the Prouince called Mœsia, which extendeth along Danubius vnto Pontus. It beginneth at the confluent aboue-named: in it are the Dardanians, Celegeri, Triballi, Trimachi, Mœsi, Thranes, and the Scythians bordering vpon Pontus. Faire riuers, out of the Dardanians countrey, Margis, Pingus, and Timachis. Out of Rhodope, Oessus: out of Hæmus, Vtus, Essamus, and Ieterus. Illyricum where it is broadest, taketh vp 325 miles: it lieth out in length from the riuer Arsia to the riuer Drinius, 800 miles. From Drinium to the cape Acroceraunium, 182 miles. *M. Agrippa* hath set downe all the whole sea comprehending Italy and Illyricum, in the compasse of 1300 miles. In it are two smaller seas or gulfs bounded as I haue said: namely, The lower, otherwise called the Ionian, in the fore-part: the inner, called Adriaticum, which also they name the vpper: in the Ausonian sea there be no islands worth the speaking, but those aboue-named: in the Ionian sea there are but few, to wit, vpon the Calabrian coast before Brundusium, by the object site whereof, the hauen is made: and against the Apulian coast Diomede, famous for the tombe and monument of *Diomedes*: another also of that name, called by some Teutria. As for the coast of Illyricum, it is pestered with more than a thousand, such is the nature of the sea, full of shelues and washes, with narrow chanels running between. But before the mouthes of Timavus, there be Islands famous for hot waters, which ebbe and flow with the sea: and neere vnto the territorie of the Istrians, Cissa, Pullariæ, and those which the Greekes name Absyrtides, of *Medeas* brother *Absyrtes* there slaine. Neere vnto them, they called the Islands Electrides, wherin is ingendred Ambre, which they cal Electrum, a most assured argument to proue the vanity of the Greeks; for that which of them they meant, was neuer known: against Iader, there is Lissa; and certain other ouer-against the Liburnians, called Cretæ: and as many of the Liburnians, Celadusæ: against Surium, there is Brattia, commended for neat and goats. Issa, inhabited by Roman citizens, and Pharia with the towne. Next to these, Corcyra, surnamed Melæna, with the towne of the Gnidians, distant 22 miles asunder: between which and Illyricum, is Melita, wherof (as *Callimachus* testifieth) the little dogs Melitæi tooke their name: and 12 miles from thence, the three Elaphites. In the Ionian sea from Oricum 1000 miles, is Sasonis, well knowne for the Pirats harbor there.

THE

THE FOVRTH BOOKE OF THE HISTORIE OF NATVRE,

WRITTEN BY C. PLINIVS SECVNDVS.

From whence first arose all the fabulous lyes, and the excellent Learning of the Greekes.

THe third Sea of Europe beginneth at the mountaines *Acroceraunia*, and endeth in Hellespont: it containeth besides nineteene smaller gulfes or creekes, 25 thousand miles. Within it, are Epirus, Acarnania, Ætolia, Phocis, Locris, Achaia, Messania, Laconia, Argolis, Megaris, Attica, Bœotia. And againe from another sea the same Phocis and Locris, Doris, Phthiotis, Thessalia, Magnesia, Macedonia, Thracia. All the fabulous veine, and learning of Greece proceeded out of this quarter. And therefore we will therein stay somewhat the longer. The countrey Epirus, generally so called, beginneth at the mountaines Acroceraunia. In it, are first the Chaones, of whom Chaonia taketh the name: then the Thesprotians, and Antigonenses: the place Aornus, and the aire arising out of it so noisome and pestiferous for birds. The Cestines, and Perrhœbians with their mountaine Pindus; the Cassiopæi; the Dryopes, Selli, Hellopes, and Molossi, among whom is the temple of Iupiter Dodonæus, so famous for the Oracle there: the mountaine Tomarus, renowned by Theopompus for the hundred fountaines about the foot thereof.

CHAP. I.

¶ *Epirus.*

EPirus it selfe reaching to Magnesia and Macedonia, hath behinde it the Dassaretians aboue named, a free nation, but anon the sauage people of the Dardanians. On the left side of the Dardanians, the Trebellians and nations of Mœsia lye ranged: afront there ioine vnto them, the Medi and Denthelates: vpon whom the Thracians border, who reach as farre as to Pontus. Thus enuironed it is and defenced round, partly with the high hill Rhodope, and anon also with L Hæmus. In the vtmost coast of Epirus among the Acroceraunia, is the castle Chimæra, vnder which is the spring of the kings water. The townes are, Mæandria and Cestria: the riuer of Thesprotia, Thyamis: the colonie Buthrotium: and the gulfe of Ambracia, aboue all others most famous, receiuing at his mouth the wide sea; 39 miles in length, and 15 in breadth. Into it runneth the riuer Acheron, flowing out of Acherusia, a lake of Thesprotia 36 miles from thence: and for the bridge ouer it 1000 foot long, admirable to those that admire and wonder at all things of their owne. In the very gulfe is the towne Ambracia. The riuers of the Molossians, Aphas and Arachtus. The citie Anactoria, and the lake Pandosia. The townes of Acarnania, called before time Curetus, be Heraclea and Echinus: and in the very entrance and mouth thereof, Actium a Colonie of *Augustus*, with the goodly temple of *Apollo*, and the free citie Ni- M copolis. When ye are gone out of the Ambrecian gulfe into the Ionian sea, yee meet with the Leucadian sea coast, and the promontorie of Leucate. Then the creeke, and Leucadia it selfe, a demie Island, sometime called Neritis, but by the labour of the inhabitants thereby, cut quite from the Continent, but annexed to it again by meanes of the winds blowing together heapes of

A of sand, which place is called Dioryctus, and is in length almost halfe a mile. A town in it there is called Leucas, sometime Neritum. Then the cities of the Acarnanians, Halyzea, Stratos, Argos surnamed Amphilochicum. The riuer Achelous running out of Pindus, & diuiding Acarnania from Ætolia, and by continuall bringing in of earth, annexing the island Artemita to the firme and maine land.

CHAP. II.

¶ *Ætolia.*

B THe Ætolian nations, be the Athamanes, Tymphei, Ephiri, Ænienses, Perrhœbi, Dolopes, Maraces and Atraces, from whom the riuer Atrax falleth into the Ionian sea. The Towne Calydon in Ætolia is seuen miles and an halfe from the sea, neere to the riuer Euenus: then followeth Macynia and Molychria, behinde which Chalcis standeth, and the mountaine Taphiassus. But in the very edge and borders thereof, the Promontorie Antirrhium, where is the mouth of the Corinthian gulfe, not a mile broad where it runneth in, & diuideth the Ætolians from Peloponnesus. The promontorie that shooteth out against it, is named Rhion: but vpon that Corinthian gulfe are the townes of Ætolia, Naupactum and Pylene: but in the mid-land parts, Pleuron, Halysarna. The mountaines of name: in Dodone, Tomarus: in Ambracia, Grania: in Acarnania, Aracynthus: in Ætolia, Acanthon, Panætolium and Macinium.

C CHAP. III.

¶ *Locri.*

NExt to the Ætolians are the Locri, surnamed Ozolæ, free States and exempt: the towne Oeanthe: the hauen of *Apollo Phæstius*: the creeke Crissæus. Within-forth are these townes Argyna, Eupalia, Phæstum, and Calamissus. Beyond them are Citrhæi, the plaines of Phocis, the towne Cirrha, the hauen Chalæon: from which, seuen miles within the land, is the free citie Delphi, vnder the hill Pernassus, the most famous place vpon earth for the Oracle of *Apollo*. The fountaine Castalius, the riuer Cephissus running before Delphos, which ariseth in a citie, sometime called Liloea. Moreouer, the towne Crissa, and together with the Bulenses, D Anticyra, Naulochum, Pyrrha, Amphissa an exempt State, Trichone, Tritea, Ambrysus, the region Drymæa, named Daulis. Then in the inmost nouke of the creeke, the very canton and angle of Bœotia is washed by the sea, with these townes Siphæ and Thebæ, which are surnamed Corsicæ neere to Helicon. The third towne of Bœotia from this sea is Page, from whence proceedeth and beareth forth the necke or cape of Peloponnesus,

CHAP. IV.

¶ *Peloponnesus.*

E PEloponnesus, called before time Apia and Pelasgia, is a demy Island, worthie to come behinde no other land for excellency and name; lying betweene two seas, Ægeum and Ionium: like vnto the leafe of a plane tree, in regard of the indented creekes and cornered nouks thereof: it beareth a circuit of 563 miles, according to *Isodorus*. The same, if you comprise the creekes and gulfes, addeth almost as much more. The streight where it beginneth to passe on and go forward, is called Isthmos. In which place the seas a bouenamed gushing and breaking from diuers waies, to wit, from the North and the East, do deuoure all the breadth of it there: vntill by the contrary running in of so great seas, the sides on both hands being eaten away, and leauing a space of land betweene, fiue miles ouer, Hellas with a narrow necke doth meet with Peloponnesus. The one side thereof is called the Corinthian gulfe, the other, the Saronian. Leocheum of the one hand, and Cenchræa of the other, do bound out and limit the said streights F where the ships are to fetch a great compasse about with some danger, such vessels I meane as for their bignesse cannot be conueighed ouer vpon wains. For which cause, *Demetrius* the king, *Cæsar* the Dictator, prince *Caius*, and *Domitius Nero*, assaied to cut through the narrow foreland, and make a channell nauigable with ease: but the attempt and enterprise was vnhappie, as appeared by the issue and end of them all. In the middest of this narrow streight which we

H haue

haue called Isthmos, the colonie Corinthus, beforetime called Ephyra, scituate hard to a little G hill, is inhabited, some 60 stadia from both sea sides: which from the top of the high hill and castle there, which is named Acrocorinthus, wherein is the fountaine Pirene, hath a prospect into both those contrarie seas. At this Corinthian gulfe there is a passage or cut by sea from Leucas to Patræ of 87 miles. Patræ a Colonie, built vpon the promontorie of Peloponnesus, that shooteth farthest into the sea, ouer-against Ætolia and the riuer Euenus, of lesse distance, as hath bin said, than fiue miles in the very gullet and enterance, do send out the Corinthian gulfe 85 miles in length, euen as far as Isthmos.

Chap. V.

H ¶ *Achaia.*

ACHaia, the name of a prouince, beginneth at Isthmus, aforetime called it was Ægialos, because of the cities, scituate so orderly vpon the strand. The principal and first there is Leucheæ abouenamed, a port towne of the Corinthians. Next to it Oluros, a castle of the Pelleneans. The townes Helice, Bura, and (into which the inhabitants retired themselues, when these beforenamed were drowned in the sea) Sicyon, Ægira, Ægion, and Erineos. Within the country was Cleone and Hysie. Also the hauen Panhormus, & Rhium described before: from which promontorie fiue miles off standeth Patræ aboue mentioned, & the place called Pheræ. of 9 hils in Achaia, Scioessa is most knowne, also the Spring Cymothoe. Beyond Patræ is the towne Olenum, the colonie Dymæ. Certain faire places called Buprasium and Hirmene: & the I promontorie Araxum. The creeke of Cyllene, the cape Chelonates: from whence to Cyllene is two miles. The castle Phlius. The tract also by *Homer* named Arethyrea, and afterwards Asophis. Then the country of the Elians, who before were called Epei. As for Elis the city it selfe, it is vp higher in the mid-land parts, 12 miles from Pylos. Within it standeth the Chappell of *Iupiter Olympius*, which for the fame of the games there, containeth the Greekes and Chaldeans account of yeares. Moreouer, the town sometime of the Piseans, before which the riuer Alpheus runneth. But in the borders and coast therof the promontorie Ichthys. Vpon the riuer Alpheus, there is passage by water in barges to the townes Aulos and Leprion. The promontory Platanestus; all these lie Westward. But toward the South, the arme of the sea called Cyparissius, and the city Cyparissa, 72 miles in circuit. The townes vpon it, Pylos, Methone, a place and K forrest called Delos: the promontorie Acritas: the creeke Asineus of the towne Asinum, & Coroneus of Corone; and these are limited with Tenarus the promontorie. There also is the region Messenia with 22 mountains. The riuer Paomisus. But within, Messene it selfe, Ithome, Oechalia, Arene, Pteleon, Thryon, Dorion, Zanclum, famous townes all for many occurrents at sundry times. The compasse of this arme of the sea is 80 miles, the cut ouer-crosse 30 miles. Then from Tenarus, the Laconian land pertaining to a free people, and an arme of the sea there in circuit about 206 miles, but 39 miles ouer. The townes Tenarum, Amiclæ. Pheræ, Leuctra, and within-forth Sparta, Theranicum: and where stood Cardamyle, Pitane, and Anthane. The L place Thyrea, and Gerania. The hill Taygetus: the riuer Eurotas, the creeke Ægylodes, and the towne Psammathus. The gulfe Gytheates, of a towne thereby (Gytheum) from whence to the Iland Creet, there is a most direct and sure cut: all these are inclosed within the promontorie Maleum. The arme of the sea next following is called Argolicus, and is 50 miles ouer, and 172 miles about. The towns about it Boea, Epidaurus, Limera, named also Zarax. Cyphanta, the hauen. Riuers, Inachus, Erasinus: betweene which standeth Argos surnamed Hippium vpon the Lake Lerne, from the sea two miles, and nine miles farther Mycenæ also where they say Tirynetha stood, and the place Mantinea. Hills, Artemius, Apesantus, Asterion, Parparus, and eleuen others besides. Fountaines, Niobe, Amymone, Psammothe. From Scylleum to Isthmus 177 miles. Towns, Hermione, Troezen, Coryphasium and Argos, called of some Inachium; of others, Dipsium. The hauen Cenites, the creeke Saronicus, beset round about in old time with woods M of Oake; whereupon it had the name, for so old Greece called an Oake. Within it stood the towne Epidaurum, much reserted vnto for the temple of *Æsculapius*, the promontorie Spiræum, the hauens Anthedon, and Bucephalus: and likewise Cenchreæ which we spake of before, being the other limit of Isthmus, together with the chappell of *Neptune*, famous for the games there represented euery fiue yeres. Thus many creekes doth scotch and cut Peloponnesus: thus many

A many seas I say do rore and dash against it. For on the North side the Ionian sea breaketh in: on the West it is beaten vpon with the Sicilian. From the South the Cretian sea driueth against it: Ægeum from the Southeast, and Myrtoum on the Northeast, which beginning at the Megarian gulfe, washeth all Attica.

Chap. VI.

¶ *Of Arcadia.*

THe midland parts thereof, Arcadia most of all taketh vp, being euery way far remote from the sea: at the beginning it was named Drymodis, but soone after Pelasgis. The towns in it be Psophis, Mantinea, Stymphalum, Tegea, Antegonea, Orchomenum, Pheneum, PalaeB tium, from whence the mount Palatium at Rome tooke the name. Megalepolis, Catina, Bocalium, Carmon, Parrhasiæ, Thelphusa, Melanæa, Heræa, Pile, Pellana, Agræ, Epium, Cynætha, Lepreon of Arcadia, Parthenium, Alea, Methydrium, Enesse, Macistum, Lampe, Clitorium, Cleone: betweene which townes is the tract Nemea, vsually called Berubinadia. Mountains in Arcadia, Pholoe with a towne so named. Item, Hyllene, Lyceus, wherein was the chappell of *Iupiter Lyceus*, Mænalus, Artemisius, Parthenians, Lampeus, and Nonacris: & eight besides of base account. Riuers, Ladon, issuing out of the meeres and fens of Pheneus, Erymanthus out of a mountaine of the same name, running both downe into Alpheus. The rest of the cities to be named in Achæa, Aliphiræi, Abeatæ, Pyrgenses, Pareatæ, Paragenitiæ, Tortuni, Typanæi, C Thryasij, Trittenses. All Achaæa generally throughout, *Domitius Nero* endowed with freedom. Peloponnesus from the promontorie of Malea to the towne Lechæum vpon the Corinthian gulfe, lyeth in bredth 160 miles: but ouer crosse from Elis to Epidaurum 125 miles: from Olympia to Argos through Arcadia 63 miles. From the same place to Phlius is the said measure. And all throughout, as if Nature made recompence for the irruptions of the seas, it riseth vp in 76 hills.

Chap. VII.

¶ *Greece and Attica.*

D AT the streights of Isthmus beginneth Hellas, of our countrymen called Græcia: the first tract thereof is Attica, in old time named Acte. It reacheth vnto Isthmus on that part thereof which is called Megaris of the colony Megara, or against Pagæ. These 2 townes as Peloponnesus lieth out in length, are seated on either hand, as it were vpon the shoulders of Hellas. The Pageans, and more than so, the Ægosthenienses lie annexed to the Magarensians, and owe service to them. In the coast thereof is the hauen Schœnus. Townes, Sidus, Cremyon, Scironia rocks for three miles long, Geranea, Megara, and Eleusin. There were besides, Oenoa and Probalinthus, which now are not to be seen, 52 myles from Isthmus. Pyræeus and Phalera, two hauens ioined to Athens by a wall, within the land fiue miles. A free citie this is, and needeth no more any mans praise: so noble and famous it is otherwise, beyond all measure. In AtE tica be these fountains, Cephissia, Larine, Callirrhoe, and Enneacreunos. Mountains, Brilessus, Megialcus, Icarius, Hymettus, & Lyrabetus: also the riuer Ilissos. From Pyræum 42 miles off, is the promontorie Sunium, likewise the promontorie Doriscum. Also Potamos and Brauron, townes in times past. The village Rhamnus, and the place Marathon, the plain Thriasius, the town Melita and Oropus, in the confines or marches of Bœotia. Vnto which belong Anthedon, Orchestos, These pre a free town Lebadea: and Thebes surnamed Bœotia, not inferior in fame and renown to Athens, as being the native country, & as men would haue it, of two gods, *Liber* and *Hercules*. Also they attribute the birth of the Muses in the wood Helicon. To this Thebes, F is assigned the forest Cithæron, and the riuer Ismenus. Moreouer fountains in Bœotia, Oedipodium, Psammate, Dirce, Epigranea, Arethusa, Hippocrene, Aganippe, and Gargaphiæ. Mountains ouer and besides the forenamed, Mycalessus, Adylissus, Acontius. The rest of the towns betweene Megara & Thebes, Eleutheræ, Haliartus, Plateæ, Pheræ, Aspledon, Hyle, Thisbe, Erythræ, Glissas, and Copæ. Neere to the riuer Cephissus, Lamia, and Anichia: Medeon, Phligone, Grephis, Coronæa, Chæronia. But in the outward borders, beneath Thebes, Ocale, Elæon, Scolos, Scœnos, Peteon, Hyrie, Mycalessus, Hyrescon, Pteleon, Olyros, Tanagia, a free State; and in

the very mouth of Euripus, which the Iſland Eubœa maketh by the oppoſite ſite thereof, Aulis, ſo renowned for the large hauen that it hath. The Bœotians in old time were named Hyantes. The Locrians alſo are named withall Epicnemidij, in times paſt Letegetes, through whom the riuer Cephiſſus runneth into the ſea. Townes, Opus (whereof commeth the gulfe Opuntinus) and Cynus. Vpon the ſea coaſt of Phocis, one & no more, to wit Daphnus. Within-forth among the Locrians, Elatea, and vpon the bank of Cephiſſus (as we haue ſaid) Lilea: & toward Delphos, Cnenius and Hiampolis: again, the marches of Locri, wherein ſtand Larymna and Thronium, neere vnto which the riuer Boagrius falleth into the ſea. Townes, Narycion, Alope, Scarphia: after this, the vale called of the people there dwelling, Maliacus Sinus, wherein bee theſe townes, Halcyone, Econia, and Phalara. Then Doris, wherin are Sperchios, Erineon, Boion, Pindus, Cytinum. On the back-ſide of Doris is the mountain Oeta. Then followeth Æmonia that ſo often hath changed name. For one and the ſame hath bin called Pelaſgicum, Argos, and Hellas, Theſſalia alſo, and Dryopis, and euermore tooke name of the kings. In it was borne a king called *Græcus*, of whom Greece bare the name: there alſo was *Hellen* borne, from whence came the Hellenes. The ſe being but one people, *Homer* hath giuen three names vnto, that is to ſay, Myrmidones, Hellenes, and Achæi. Of theſe, they be called Phthiotæ who inhabit Doris. Their townes be Echinus, in the very gullet & entrance of the riuer Sperchius: and the ſtreights of Thermopylæ, ſo named by reaſon of the waters: and foure miles from thence Heraclea, was called Trachin. There is the hill Callidromus: and the famous townes, Hellas, Halos, Lamia, Phthia, and Arne.

Chap. VIII.

¶ *Theſſalie.*

MOreouer in Theſſalie, Orchomenus, called before-time Minyeus; and the towne Almon, or after ſome Elmon; Atrax, Pelinna, and the fountaine Hyperia. Townes, Pheræ, behind which Pierius ſtretcheth forth to Macedonie: Lariſſa, Gomphi, Thebes of Theſſalie, the wood Pteleon, and the creeke Pagaſicus. The towne Pagaſa, the ſame named afterwards Demetrias; Tricca, the Pharſalian plains with a free city; Cranon and Ilettia. Mountains of Phthiotis, Nymphæus, moſt faire and ſightly for the naturall arbors and garden workes there: Buzigæus, Donaceſa, Bermius, Daphiſſa, Chimerion, Athamas, Stephane. In Theſſaly there be 34, whereof the moſt famous are, Cerceti, Olympus, Pierus, Oſſa: iuſt againſt which, is Pyndus and Othrys, the ſeat and habitation of the Lapithæ; and thoſe lie toward the Weſt: but Eaſtward, Pelios, all of them bending in manner of a theatre: and before them ſtand raunged wedge-wiſe, 72 cities, Riuers of Theſſalie. Apidanus, Phœnix, Enipeus, Onochomus, Pamiſus: the fountain Meſſeis, the people Bœbeis: and aboue all the reſt the moſt famous riuer Peneus, which ariſing neere Gomphi, runneth for 500 ſtadia in a wooddie dale between Oſſa and Olympus, and halfe that way is nauigable. In this courſe of his, are the places called Tempe, 5 miles in length, and almoſt an acre and a halfe broad, where on both hands the hils ariſe by a gentle aſcent aboue the reach of mans ſight. Within-forth glideth Peneus by, in a freſh green groue, cleare as chryſtall glaſſe ouer the grauelly ſtones, pleaſant to behold for the graſſe vpon the banks, and reſounding again with the melodious conſent of the birds. It taketh in the riuer Eurotus, but entertaineth him not, but as he floweth ouer the top of him like oile (as *Homer* ſaith:) within a while after that he hath carried him a ſmall way, letteth him goe againe and rejecteth him, as refuſing to mingle with his owne ſiluer ſtreams, thoſe pœnall and curſed waters engendred for the infernall Furies of hell.

Chap. IX.

¶ *Magneſia.*

TO Theſſaly, Magneſia is annexed: the fountaine there is Libethra. The townes, Iolchos, Hirmenium, Pyrrha, Methone, Olizon. The promontorie Sepias. Townes moreouer, Caſtana, Sphalatra, and the promontory Ænantium. Towns beſides, Meliboea, Rhiſus, Erymne. The mouth of Peneus. Towns, Homolium, Orthe, Theſpiæ, Phalanna, Thaumacie, Gyrton, Cranon, Acarne. Dorion, Melitæa, Phylace, Potinæ. The length of Epirus, Achaia, Attica and Theſſalie, lying ſtraight out, is by report 480 miles; the bredth 287.

CHAP.

Chap. X.

¶ *Macedonie.*

MAcedonie, ſo called afterwards (for before-time it was named Emathia) is a kingdome conſiſting of 150 ſeuerall States, renowmed for two kings aboue the reſt, and ennobled ſometime for the Monarchie and Empire of the world. This countrie lying farre in behind Magneſia and Theſſaly toward the nations of Epirus Weſtward, is much troubled and infeſted with the Dardanians. The North parts therof are defended by Pæonia and Pelagonia, againſt the Triballi. The townes be theſe, Aege, wherein the maner was to interre their kings: Bercœa, and Ægynium, in that quarter which of the Wood is called Pieria. In the outward borders Heraclea, and the riuer Apilas: more townes, Phina, and Oloros: the riuer Haliacmon. Within-forth are the Haloritæ, the Vallei, Phylacei, Cyrreſtæ, Tyriſſæi: Pella the Colonie: the town Stobi of Romane citizens. Anon, Antigonia, Europus vpon the riuer Axius, and another of the ſame name through which Rhædias runneth: Heordeæ, Scydra, Mieza, Gordiniæ. Soone after in the borders, Ichnæ, and the riuer Axius. To this bound the Dardani: Treres, and Pieres border vpon Macedony. From this riuer, are the nations of Pæonia, Parorei, Heordenſes, Almopij, Pelagones, and Mygdones. The mountaines Rhodope, Scopius, and Orbelus. The reſt is a plaine countrie, wherein Nature ſeemes to ſet out her riches; in the lap whereof are the Arethuſij, Antiochienſes, Idomenenſes, Doberienſes, Trienſes, Allantenſes, Andariſtenſes, Moryllij, Gareſci, Lynceſtæ, Othrionei, and the free ſtates of the Amantines and Oreſtæ. Colonies, Bulledenſis & Dienſis. Xilopolitæ, Scotuſſæi free; Heraclea, Sintica, Timphei, and Coronæi. In the coaſt of the Macedonian ſea, the towne Calaſtra, and within-forth, Phileros, and Lete: and in the middle bending of the coaſt, Theſſalonica, of free eſtate and condition. To it from Dyrrachium, it is 114 miles, Thermæ. Vpon the gulfe Thermaicus, be theſe townes, Dicæa, Pydna, Derrha, Scione: the promontory Canaſtæum. Townes, Pallene, Pherga. In which region theſe mountaines, Hypſizorus, Epitus, Alchione, Leuomne. Townes, Niſſos, Brygion, Eleon, Mendæ, and in the Iſthmos of Pallene, the Colinie ſometime called Potidæa, and now Caſſandria, Anthemus, Holophyxus the creeke, and Mecyberna. Townes, Phiſcella, Ampelos, Torone, and Singos: the Frith (where *Xerxes* king of the Perſians cut the hill Athos from the Continent) in length a mile and a halfe. The mountaine it ſelfe ſhooteth out from the plaine into the ſea, 75 miles. The compaſſe of the foot thereof takes 150 miles. A towne there was in the pitch of it, Acroton. Now there be Vranopolis, Palæortium, Thyſſus, Cleone, Apollonia, the inhabitants whereof be named Macrobij. The towne Caſſera, and a ſecond gullet or creeke of the Iſthmus, Acanthus, Stagira, Sitone, Heraclea, and the region lying vnder Mygdonia, wherein are ſeated farre out from the ſea, Apollonia and Arethuſa, Againe in the coaſt, Poſidium, and a creeke with the towne Cermorus: Amphipolis a free ſtate, and the people Biſaltæ. Then the riuer Strimon, which is the bound of Macedonia, which ſpringeth in Hæmus: of which, this is worthy to be remembred, that it runneth into ſeuen lakes before it keepeth a direct courſe. This is that Macedonie, which ſometime conquered the dominion ouer all the earth: this ouer-ran Aſia, Armenia, Iberia, Albania, Cappadocia, Syria and Ægypt; yea and paſſed ouer Taurus and Caucaſus: this ruled ouer the Bactrians, Medians, and Perſians, and poſſeſſed all the Eaſt: this hauing the conqueſt of India, raunged after the tracts of Father *Liber* and *Hercules*. This is the very ſame Macedonie, of which in one day *Paulus Æmilius* our Generall, ſacked and ſold 72 cities. See the difference of fortune in two men.

Chap. XI.

¶ *Thracia.*

NOw followeth Thracia, among the moſt valiant nations of Europe, diuided into 52 regiments of ſouldiers. Of thoſe States in it, the Denſeletes and Medi, whom it grieues me not to name, doe inhabit neere to the riuer Strymon on the right ſide, as farre as to the Biſaltæ aboue-named: on the left, the Digeri, and many townes of the Beſſi, euen to the riuer Neſtus, which inuironeth the bottome of the hill Pangæus, between the Eleti, Diobeſi, and Carbileſi, and ſo forward to the Bryſæ and Capæi. Odomanta a towne of the Odryſians, ſeth

deth out the riuer Hebrus to the neighbour-borderers, the Carbiletes, Pyrogeris, Drugeri, Cænicks, Hypsalts, beni, Corpilli. Botiæi, and Edons. In the same tract the Selletæ, Priautæ, Diloncæ, Thyni, Celetæ, the greater vnder Hæmus, the lesse vnder Rhodope: between whom, runneth the riuer Hebrus. The towne scituate beneath Rhodope, was before-time named Poneropolis; soone after by the founder, Philippopolis: but now of the site thereof Trimontium. The ascent of Hæmus vp to the top, taketh six miles: the backe-side and hanging thereof downe to Ister, the Mœsians, Getes, Aoti, Gaudæ, and Clatiæ, and vnder them the Arræi, Sarmata whom they call Areatæ, and Scythians: and about the sea coast of Pontus, the Morisenes and Sithonians, from whom the Poet *Orpheus* descended, doe inhadite. Thus Ister boundeth it on the North: in the East, Pontus and Propontus: Southward, the sea Ægæum, in the coast whereof from Strimon, stand Apollonia, Oestima, Neapolis, and Polis. Within-forth, the Colonie of *Philip*, and 325 miles from Dyrrhachium, Scotusa, Topiris, and the mouth of the riuer Nestus. The hill Pangæus, Heraclea, Olynthos Abdera a free citie, the meere and nation of the Bisons. There, stood the town Tinda, terrible for the horses of *Diomedes* that stabled there. Now at this day, Diceæ, Ismaron, the place Parthenion, Phalesina, Maronea called Ortagurea before-time. The mountaine Serrium and Zonæ: then, the plaine Doriscus able to receiue * 10000 men: for so *Xerxes* took a iust account of his armie and numbred it. The mouth of Hebrus: the hauen of Stentor: the free towne Ænea, together with the tombe of *Polydorus*, the region sometime of the Cicones. From Doriscus, the coast bendeth crookedly to Macron-Tichos, for 122 miles. About which place the riuer Melas, whereof the creeke be areth name. Townes, Cypsella, Bisanthe, and that which is called Macron-Tichos, what way as stretching forth the walls along from Propontis to the Creeke Melanes betweene two seas, it excludes Chersonesus as it runneth out. For, Thracia of one side beginning at the sea coast of Pontus, where the riuer Ister is discharged & swallowed vp, hath in that quarter passing faire and beautifull cities, to wit, Istropolis of the Milesians, Tomi, and Calatis which before was called Acernetis. It had sometime Heraclea and Bizon, which sunke and was lost in a gaping chinke of the earth; but now in stead thereof Dionysopolis, called before Crunos The riuer Ziras runneth hard by it. All that tract, the Scythians named besides Aroteres, possessed. There townes were, Aphrodisius, Libistos, Zigere, Borcobe, Eumenia, Parthenopolis, Gerania, where it is reported that the nation of the Pygmeans kept, whom the barbarous people call Catizi, and they are of beliefe that they were chased away and put to flight by cranes. In the edge thereof next to Dionysopolis, there is Odessus of the Milesians, the riuer Pomitcus, the towne Tetranaulocos: the mountaine Hæmus bearing forth with a huge top into Pontus had in the pitch therof the towne Aristæum. Now in the coast is Mesembria and Anchialum, where Messa was. The region Astice. There was the towne Anthium, now there is Apollonia The riuers Panissa, Rira, Tearus, Orosines Townes, Thynnias, Almedessos, Deuelton with the poole which now is called Deultum, belonging to the old souldiers. Phinopolis, neere vnto which is Bosphorus. From the mouth of Ister to the entrance of Pontus, some haue made it 555 miles. *Agrippa* hath set to 40 miles more. And from thence to the wall aboue-named 150: and so from it to Chersonesus 126. But neere to Bosphorus is the arme of the sea Gasthenes. The hauen surnamed of old men, and another likewise of women. The promontory Chrysoceras, whereupon standeth the town Bizantium of free estate, called before-time Lygos. From Dyrrachium it is 711 miles. Thus much lies out the main in length between the Adriatick sea and Propontis. Riuers, Bathynias, Pydaras, or Atyras. Towns, Selymbria, Perinthus, annexed to the Continent 200 paces broad. Within-forth, Byzia, the castle of Thracian kings, hated of Swallowes, vpon the horrible and cursed fact of *Terem*. The region Camica: the colonie Flauiopolus, where before-time the town was called Zela. And 50 miles from Byria the Colony Apros, which is from Philippi 188 miles. But in the borders, the riuer Erginus, where was the town Gonos. And there you leaue the citie Lysimachia, also now in Chersonesus. For another land passage or Isthmus there is of like streightnes, al one in name, and of equall breadth with that of Corinth. Likewise lon both sides two cities do beautifie and set out the stronds, which they take vp not vnlike to the other, to wit, Pactiæ from Propontis and Cardia from the gulfe Melanes: as for this, it taketh the name of the forme and proportion of the place made like a heart: and both, afterwards, where inclosed within Lysimachia 3 miles from the *long walls aboue said. Chersonesus from Propontis side, had Tiristasis & Crithotes, also Cissa fast vpon the riuer Ægos: now it hath from the colony Apros 32 miles Resistos, ouer-against

* Or 100000.

* Macrens Tichos.

against the colony Pariana. And Hellespontus, diuiding Europe from Asia, seuen stadia asunder (as we haue said) hath foure cities there opposite one against another, to wit, in Europe, Calippolis and Sestos; in Asia, Lampsicum and Abydos. Then, is the promontory of Chersonesus Mastusia, iust contrary to Sigeum, in the crooked front whereof is Cynossema: for so is *Hecubaes* tombe named, the very rode of the Athenians nauie. The towne and chappell of *Protesilaus*: and in the very vtmost forefront of Cherronesus, which is called Æolium, the towne Elæus. After it, as a man goeth to the gulfe Melane, the hauens Cælos, Panhormus, and the aboue-named Cardia. The third sea of Europe, is in this manner bounded and limited. Mountaines of Thrasia ouer and aboue those afore rehearsed, Edonus, Gigemorus, Meritus, and Melamphyllon. Riuers falling into Hebrus; be Bargus, and Suemus. The length of Macedonie, Thracia and Hellespontus, is set downe before. Some make it seuen hundred and twenty miles. The breadth is three hundred and eighty miles. The sea Ægium tooke that name of a rocke, betweene Tenedos and Chios, more truly than of an Island named Aex, resembling a goat, and therefore so called of the Greekes; which all at once appeareth to rise out of the mids of the sea. The sea-men that saile from out of Achaia to Andros, discouer it on the right hand, and to them it presageth some dreadfull and mischieuous accident. Part of the Ægæan sea is laid to the Myrtoum, and so called it is of a little Island, which sheweth it selfe to them that set saile from Gerestus to Macedonie, not farre from Charistos in Eubœa. The Romanes comprehend all these seas in two names: namely, Macedonicum, all that which toucheth Macedonia and Thracia: and Græcienſum where it beateth vpon Greece. As for the Greekes, they diuide euen the Ionian sea into Siculum and Creticum, of the Islands. Also Icarius they call that between Samos and Mycione. All the other names are giuen by gulfes and creekes, whereof we haue spoken. And thus much verily as touching the seas and nations contained in this manner with-in the third section or gulfe of Europe.

Chap. XII.

¶ *The Islands betweene those lands, among which, Creta, Eubœa, Cyclades, and Sporades: also of Hellespont, Pontus, Mœotis, Dacia, Sarmatia and Scythia.*

ISlands ouer against Threspotia, Corcyra: 12 miles from Buthrotus, and the same from the cliffes Acroceraunia 50 miles, with a citie of the same name, Corcyra of free condition, also the towne Cassiope, and the temple of *Iupiter Cassiopeus*: it lieth out in length 97 miles. *Homer* called it Scheria and Phæacia: *Callimachus* also, Drepane. About it are some others: but bending toward Italy, Thoronos: and toward Leucadia the two Paxæ, fiue miles diuided from Coreyra. And not farre from them before Corcyra, Ericusa, Marate, Elaphusa, Malthace, Trachiæ, Pytionia, Ptychia, Tarachie. And from Pholachrum a promontory of Corcyra, the rocke into which their goeth a tale, that the ship of *Vlisses* was turned, for the resemblance it hath of such a thing. Before Leucadia, Sybota. But between it & Achaia there be very many: of which Teleboides the same that Taphiæ: but of the inhabitants before Leucadia, they be called Taphias, Oxie, and Prinoessa: and before Ætolia, the Echinades, Ægialia, Coronis, Thyatira, Geoaris, Dionysia, Cyrnus, Chalcis, Pinara & Mystus. Before them in the deep sea, Cephalenia and Zacynthus, both free states: Ithaca, Dulichium, Same, Crocylea, and Paxos. Cephalenia sometime called Melæna, is 11 miles off, and 44 miles about. As for Same, it was destroied by the Romanes: howbeit, still it hath three townes: between it and Achaia is Zacynthus with a town, a stately Island, & passing fertile. In times past it was called Hyrie, and is 22 miles distant from the South coast of Cephalenia. The famous hill Elatus is there. The Isle it self is in circuit 25 miles. Twelue miles from it is Ithaca, wherin stands the mountain Neritus. And in the whole it takes vp the compasse of 25 miles. From it 12 miles off is Araxum a cape of Peloponnesus. Before this Island in the main sea there appeare Asteris and Prote. Before Zacynthus 35 miles full East, are the two Strophades, called by others Plotæ: and before Cephalenia, Letoia. Before Pylos three Sphagiæ, and as many before Messene, called, Oenussæ. In the gulfe Asinæus three Thyrides: in the Laconian gulfe, Teganusa, Cothon, Cythera with the towne, named beforetime Porphyris. This lies fiue miles from the promontorie Malea, dangerous for ships to come about it, by reason of the streights there. in the Argolick sea are Pityusa, Irine & Ephyre

and

and against the territory Hermonium, Typarenus, Epiropia, Colonis, Aristera: ouer against G
Troezenium Calauria, halfe a mile from Plateæ: also, Belbina, Lacia and Baucidias. Against E-
pidaurus, Cecryphalos, and Pytionesos, six miles from the Continent. Next to it is Ægina a
free state, 17 miles off, and for 20 miles they saile by it. The same is distant from Pyræum the
port of the Athenians, 12 miles, and beforetime was vsually called Oenone. Against the pro-
montory Spiræum, there lie onposite Eleusa, Dendros, two Craugiæ, two Cæciæ, Selachusa,
Cenchreis and Aspis. Also in the Megarian gulfe, there be foure Methurides. As for Ægilia, it
is 15 miles from Cythera, and the same is from Phalaserna a towne in Creet 25 miles. And
Creet it selfe, lying of one side to the South, and the other to the North, stretcheth forth in
length East and West; a famous and noble Island for a hundred cities in it. *Dositades* saith it
tooke that name of the nymph *Creta* daughter of *Hesperis*: but according to *Anaximander*, of a
king of the Curetes. *Philistides*, *Mallotes*, *Crates*, haue thought it was called first Æria, and after- H
wards Curetis: and some haue thought it was named Macaros for the blessed temperature of
the aire. In bredth it exceedeth in no place 50 miles, and in the middle part broadest it is: but
in length it is full 270 miles: in circuit 589 miles: and winding it selfe into the Cretick sea, so
called of it, where it stretcheth out farthest Eastward, it puts forth of it the promontory Sam-
monium iust against Rhodos, and Westward Criu-Metopon, toward Cyrenæ. The principall
townes of marke, be Phalaserne, Elæa, Cysamum, Pergamum, Cydon, Minoum, Apteron, Pan-
tomatrium, Amphymalla, Rhythimna, Panhormum, Cyteum, Apollonia, Matium, Heraclea,
Miletos, Ampelos, Hyera-pytna, Lebena, Hierapolis. And in the midland parts, Cortyna, Phæ-
stum, Gnossus, Potyrrhenium, Myrina, Lycastus, Rhamnus, Lyctus, Dium, Asum, Pyloros, Rhy-
tion, Clatos, Pharæ. Holopyxos, Lasos, Eleuthernæ, Therapne, Marathusa, Mytinos. And other I
townes about the number of 60, stand yet vpon record. The hils be Cadiscus, Idæus, Dictæ-
us, and Moricus. The Isle it selfe, from the promontory in it called Criu-Metopon, as *Agrippa*
reports, is distant from Phycus, a promontory of the Cyrene 225 miles. Likewise from Capes-
cum point, it is from Malea in Peloponnesus 80 miles. From the Island Carpathus, which lies
Westward from the cape Sammonia, 60 miles. This Island aforesaid lyeth between it and
Rhodos. The rest about it be these: before Peloponnesus two Coricæ, and as many Mylæ: and
on the North side, when a man hath Creet on the right hand, there appeares Leuce iust against
Cydonia, together with the two Budoræ, against Matium, Cia: against the promontory Itanum
Onisa and Leuce: against Hierapytna, Chrysa, and Caudos. In the same coast are Ophiussa, Bu- K
soa, and Rhamnus: and when men haue fetched about and doubled the point Criu-Metopon,
appeare the Isles called Musagores. Before the promontory Sammonium, Phocæ, Platiæ, Sir-
nides, Naulochos, Armedon and Zephire. But in Hellas, yet still in Ægium, Lichades, Scar-
phia, Maresa, Phocaria, and very many more ouer against Attica, but towne lesse, and therefore
obscure and of no reckoning: but against Eleusin, the noble Salamis, and before it Psytalia: and
from Sunium, Helene fiue miles off: and Ceos from thence as many, which our countrimen
haue named Cæa: but the Greekes Hydrussa, cut off and dismembred from Eubœa. In times
past it was 500 stadia long: but soone after, foure parts almost, namely those that butted vpon
Bœotia, eaten vp by the same sea: so as now the towns remaining that it hath, be Iulis and Car-
thæa. For Coressus and Pœcessa are perished & gone. From hence as *Varro* saith, came the fine
linnen cloath that women vse: yea, and Eubœa it selfe hath been plucked from Bœotia, and di- L
uided with so little an arme running betweene, that a dridge ioineth the one to the other: eui-
dent it is to the eie, and well seen, by reason of two promontories in the South side, to wit, Ge-
nestum, bending toward Attica, and Capharens to Hellespontus: and one vpon the North-side,
to wit, Cæncus. In no part thereof doth it extend broader than 40 miles: and no where doth it
gather in narrower than 20. But in length from Attica as far as Thessalie, it lies along Bœotia
150 miles: and containeth in circuit 365. From Hellespont, on Caphareus side, it is 225 miles.
In times past renowned it was for these cities, Pyrrha, Porthmos, Nesos, Cerinthus, Oreum, Di-
um, Ædepsum, Ocha, Oechalia, now Chalcis, ouer against which stands Aulis in the main: but
now, for Geresstum, Eretria, Carystus, Oritanum, Artemisium, the fountain Arethusa, the riuer
Lelantum, the hot waters called Hellopiæ, it is of great name: but yet in more request for the M
marble of Carystus. In former time it was called commonly Chalchodontis or Macris, as *Dio-*
nysius and *Ephorus* doe say: but Macra, according to *Aristides*: and as *Callidemus* would haue it,
Chalcis, for the brasse there first found: and as *Menæchmus* saith, Abantias: and last of all Aso-
pis,

A pis, as the Poets commonly name it. Without in the Myrtoum sea be many Isles, but of grea-
test marke be Glauconnensis and Ægilia: and neere to the promontory Geresstum about Delos
certain lying round together, whereupon they tooke their name Cyclades. The first and chiefe
of them, Andrus with a towne, is from Geresstum 10 miles, and from Ceum 39. *Myrsilus* saith it
was called Cauros, and afterwards Antandros. *Callimachus* nameth it Lasia: others Nonagria,
Hydrussa and Epagris: it takes in compasse 93 miles. A mile from the same Andros, and 15
from Delos, lieth Tenos, with a town fifteen miles in length: which for the plenty of water *A-*
ristotle saith was called Hydrussa, but others name it Ophiussa. The rest be these, Myconos
with the hill Dimastos, 15 miles from Delos. Scyros Syphnus, before-time named Heropia
and Acis, in circuit 28 miles about: Seriphus 12 miles, Præpesinthus, Cythnus, and Delos it
selfe, of all others most excellent by far, as being the midst of all the Cyclades, much frequen-
B ted for the temple of *Apollo*, and for merchandise and trafique. Which hauing a long time flo-
ted vp and downe, as it is reported, was the only Island that neuer felt earthquake vnto the time
of *M. Varro*. *Mutianus* hath recorded that it was twice shaken. *Aristotle* giueth a reason of the
name in this sort, because it was discouered and appeared on a sudden. *Æglosthenes* termeth it
Cynthia: others Ortygia, Asteria, Lagia, Chlamydia, Cynethus, and Pyrpile, for that in it fire
was first found out. It is but 5 miles about, and riseth vp by the ascent of the hil Cinthus. Next
it is Rhene, which *Anticlides* called Celadussa, and *Helladius* Artemite. Moreouer, Syros, which
antient writers haue said to be in circuit 26 miles, and Mutians 160. Oliaros, Paros, with a
towne, 38 miles from Delos, of great name for the white marble there, which at first men called
C Pactia, but afterwards Minois. From it seuen miles and a halfe is Naxus (18 miles from De-
los) with a towne which they called Strongyle, afterwards Dia, within a while Dionysias, of
the plentifull vines, and others, Sicily the lesse, and Callipolis. It reacheth in circuit 75 miles,
and is halfe as long again as Paros. And thus far verily they obserue & note for the Cyclades;
the rest that follow for the Sporades. And these they be, Helenum, Phocussa, Phæcasia, Schi-
nussa, Phalegandros, and 17 miles from Naxos, Icaros: which gaue name to the sea, lying out as
far in length with two towns, for the third is lost: before-time it was called Dolichum, Macris,
and Ichtyoessa. It is scituate Northeast from Delos 50 miles: and from Samos it is distant
35 miles. Between Eubœa and Andros there is a frith 12 miles ouer. From it to Geresstum is
112 miles and a halfe: and then no order forward can be kept: the rest therefore shall be set
D downe huddle by heapes. Ios from Naxus 24 miles, venerable for the sepulchre of *Homer*: it
is in length 25 miles, and in former time called Phœnice. Odia, Letandros, Gyaros with a town,
12 miles about. It is from Aneros 62 miles. From thence to Syrnus 80 miles. Cynethussa, Te-
los, famous for costly ointment. *Callimachus* calls it Agathussa. Donysa, Pathmos, in circuit 30
miles. Corasiæ, Lebinthus, Leros, Cynara, Sycinus, which before-time was Oenoe, Heratia the
same that Onus, Casus otherwise Astrabe, Cimolus, *alias* Echinussa, Delos with a towne, which
Aristides nameth Byblis, *Aristotle* Zephyria, *Callimachus* Himallis, *Heraclides* Syphnus and Acy-
tos, and this of all the Islands is the roundest. After it Machia, Hypere sometime Patage, or af-
ter some Platage, now Amorgos, Potyægos. Phyle, Thera; when it first appeared it was called
Calliste. From it afterwards was Therasia plucked: and between those twain soone after arose
E Automate, the same that Hiera: and Thia, which in our daies appeared new out of the water
neere Hiera. Ios is from Thera 25 miles. Then follow Lea, Ascania, Anaphe, Hippuris, Hip-
purissusa. Astipalæa, of free estate, in compasse 88 miles: it is from Cadiscus a promontory of
Creta, 125 miles. From it is Platea, distant 60 miles. And from thence Camina, 38 miles: then
Azibnitha, Lanise, Tragia, Pharmacusa, Techidia, Chalcia, Calydna, in which are the townes
Coos and Olymna. From which to Carpathus, which gaue the name to the Carpathian sea is
25 miles, and so to Rhodes with a Southerne winde. From Carpathus to Casos 7 miles: from
Casos to Samonium a promontorie of Crete, 30 miles. Moreouer, in the Euboike Euripe, at
the first entrance wel-neere of it are the foure Islands Petaliæ, and at the end thereof, Atalante,
Cyclades, and Sporades: confined and enclosed on the East with the Icarian sea coasts of A-
F sia: on the West with the Myrtoan coasts of Attica. Northward with the Ægæan sea: and
South with the Creticke and Carthaginian seas; and take vp in length two hundred myles.
The gulfe Pegasicus hath before it, Eutychia, Cicynethus, and Scyrus aboue said: but the
vtmost of all the Cyclades and Sporades, Gerontia, Scadira, Thermeusis, Irrhesia, Solin-
nia, Eudemia, Nea, which is consecrate vnto *Minerua*. Athos before it hath foure, Pepare-

thus

thus with a town somtime called Euonos, 9 miles off, Scyathus 5 miles, and Iulios with a town G
88 miles off. The same is from Mastusia in Corinthos 75 miles, & is it self in circuit 72 miles.
Watered it is with the riuer Ilissus, from thence to Lemnos 22, and is from Athos 87. in com-
passe it containeth 22 miles and a halfe. Townes it hath, Hephæstia and Marina, into the Mar-
ket place wherof the mountain Athos casteth a shadow in the hottest season of sommer. Thas-
sos a free State is from it fiue miles: in times past it was called Æria or Æthria. From thence
Abdera in the continent is 20 miles: Athos 62: the Isle Samo-Thrace as much, being a free
priuiledged state, and lying before Hebrus. From Imbrus 32 miles: from Lemnus 22 miles
and a halfe: from the coast of Thracia 28 miles: in circuit it is 32 miles, and hath the rising
of the hill Saoces for the space of ten miles, and of all the rest is fullest of hauens and harbors.
Callimachus calleth it by the old name Dardania. Betwixt Cherrhonesus and Samo-Thrace is H
Halomesus, about 15 miles from either of them: beyond lieth Gethrone, Lamponia, Alope-
conesus not farre from Cœlos, an hauen of Cherrhonesus: and some other of no name or re-
gard. In this sea let vs rehearse also the desart and vnpeopled Isles, such as we can finde names
for, to wit, Desticos, Larnos, Cyssicos, Carbrusa, Celathusa, Scylla, Draconon, Arconesus, Di-
ethusa, Scapos, Capheris, Mesate, Æantion, Phaterunetos, Pateria, Calete, Neriphus and Po-
lendus.

The fourth of those great seas in Europe, beginning at Hellespont, endeth in the mouth of
Mœotis. But briefly we are to describe the forme of the whole sea, to the end the parts may be
sooner and more easily known. The vast and wide Ocean lying before Asia, and driuen out from
Europe in that long coast of Chersonesus, breaketh into the maine with a small and narrow is- I
sue, and by a Firth of 7 stadia, as hath been said, diuideth Europe from Asia. The first streights
they call Hellespontus: this way *Xerxes* the King made a bridge vpon ships, and so led his ar-
mie ouer. From thence there is extended a small Euripus or arme of the sea for 86 miles space
to Priapus a city of Asia, wheras *Alexander* the great passed ouer. From that place the sea grows
wide and broad, and again gathereth into a streight: the largeness thereof is called Propon-
tis, the streights Bosphorus, halfe a mile ouer; and that way *Darius* the father of *Xerxes* made
a bridge ouer and transported his forces. The whole length of this from Hellespont is 239
miles. From thence the huge main sea called Pontus Euxinus, and in times past Axenus, takes
vp the space between lands far dissite and remote asunder, and with a great winding and tur-
ning of the shores bendeth back into certain horns, and lieth out-stretched from them on both K
sides, resembling euidently a Scythian bow. In the very mids of this bending it ioineth close
to the mouth of the lake Mœotis, and that mouth is called Cimmerius Bosphorus, 2 miles and
a halfe broad. But between the two Bosphori, Thracius and Cimmerius, there is a direct strait
course between, as *Polybius* saith, of 500 miles. Now the whole circuit of all this sea, as *Varro*
and all the old writers for the most part do witnesse, is 2150 miles. *Nepos Cornelius* addes there-
to 350 miles more. *Artemidorus* maketh it 2919 miles. *Agrippa*, 2360 miles. *Mutianus*, 2865
miles. In like sort some haue determined and defined the measure on Europe side to be 4078
miles and a halfe: others, 1172 miles. *M. Varro* taketh his measure in this manner: from the
mouth of Pontus to Apollonia 188 miles and a halfe: to Calatis as much. Then to the mouth
of Ister 125: to Boristhenes 250: to Cherrhonesus a towne of the Heracleates, 375 miles. To L
Panticapæus, which some call Bosphorus, the vtmost coast of Europe, 222 miles and a halfe,
which in all makes 1336 miles and a halfe. *Agrippa* measureth thus: From Byzantium to the
riuer Ister 560 miles: then to Panticapæum 630: from thence the very lake Mœotis taking
into it the riuer Tanais, running out of the Rhiphæan hills, is supposed to beare the compasse
of 1306 miles, being the farthest bound betweene Europe and Asia. Others again make 11025
miles. But surely from his mouth to the mouth of Tanais, and take a streight course, it is 375
miles without question. The inhabitants of that coast haue beene named in the description
and mention of Thrace, as farre as to Istropolis: now from thence the mouthes of Ister. This
riuer arising among the hills of Abnoba a mountaine of Germanie, ouer against Rauricum a
towne in Gaule, passing many a mile beyond the Alpes, and through innumerable Nations M
vnder the name of Danubius, with a mightie encrease of waters, and where hee first begin-
neth to wash Illyricum, taking the name of Ister after he hath receiued three score riuers, and
the one halfe of them well neere nauigable, rolleth into Pontus with six huge streames. The
first mouth of it is Peuces, soone after the Island it selfe Peuce, of which the next Channell
tooke

A tooke name, and is swallowed vp of a great miere of 19 miles. Out of the same channell and
aboue Astropolis, a poole is bred of 63 miles compasse, which they cal Halmyris. The second
mouth is called Naracustoma: the third Calostoma, neere the Island Sarmatica: the fourth
Pseudostoma, and the Island Conopon Diabasis. After that, Boreostoma, and Spireostoma.
Each of these are so great, that by report the sea for 40 miles length within it is ouer-matched
with the same, and the fresh water may so farbe euidently tasted. From it, into the inland parts
of the country, the people verily be all Scythians: but diuers other nations there be that inha-
bit the coasts next to the sea: in some places the Gete, called of the Romanes Daci: in others
Sarmatæ, of the Greekes Sauromatæ; and among them, the Hamaxobij or Aorsi. Elsewhere,
the bastard and degenerate Scythians, who are come from base slaues, or else the Troglodites,
and anon the Alani and Rhoxalani. But the higher parts betweene Danubius and the forrest
B Hercynius, as farre as to the Pannonian wintering harbours of Carnuntum, and the confines
there of the Germans, the fielden countrie also & plains of Iazege, the Sarmatians possesse. But
the hills and forrests, the Dakes who were expelled by them, do inhabite as farre as to the riuer
Pythyssus from Marus; or peraduenture it is Duria, diuiding them from the Sueuians & king-
dome of Vannians. The parts against these, the Bastarnæ doe keepe; and from thence, other
Germans. *Agrippa* hath set downe that whole tract from Ister to the Ocean, to mount vnto 2000
miles, and 400 lesse in bredth, to wit, from the desarts of Sarmatia to the riuer Vistula. The
name of Scythians euery where continually runs into Sarmatians and Germans. Neither hath
that old denomination remained in any others but those, who (as I haue said) liue farthest off,
and in the edge of these nations, vnknowne in manner to all men besides. But the townes next to
C Ister are Cremniscos, and Æpolium: the mountaines Macrocenij: the noble riuer Tyra, gi-
uing name to the towne, whereas before-time it was called Ophiusa. Within the same there is
a spatious Island, inhabited by the Tyragetæ. And it is from Pseudostomum, a mouth of Ister,
130 miles. Soone after be the Axiacæ, bearing the name after the riuer: beyond whom are the
Crobyzi: the riuer Rhode: the creeke Sagaricus, and the hauen Ordesus. And 120 miles from
Tyra, is the great riuer Borysthenes; also a lake and people of that name: yea and a towne 15
miles within from the sea, called by ancient names Olbropolis, and Miletopolis. Againe, in
the sea side, the hauen or harbour of the Achæans: the Island of *Achilles*, famous for the tombe
D of that worthy wight. And from it 135 miles, there is a demy Island lying out acrosse in fashi-
on of a sword, called Dromos Achilleos, vpon occasion of his exercise there of running: the
length whereof *Agrippa* hath declared to be 80 miles. All that tract throughout, the Taurisci,
Scythians, and Sarmatians do inhabite. Then the wilde woodland countrie gaue the name vn-
to the sea Hylæum, which beates hard vpon it: the inhabitants are called Enæcadloæ. Beyond,
is the riuer Panticapes, which diuideth the Nomades and Georgians asunder: and soone after
Acesinus. Some writers doe shew, that Panticape together with Borysthenes, runne together in
one confluent beneath Olbia, but they that write more exactly, doe name Hypanis. See how
much they erred, who haue described it in a part of Asia. It entreth into the sea with a mighty
great ebbe and returne of the water, vntill it be within fiue miles of Mœotis, compassing as it
goeth a mighty deale of ground, and many nations. Then there is a gulfe or arme of the sea cal-
E led Corcinites, and a riuer Pacyris. Towns, Naubarum and Carcine. Behind, is the lake Buges,
let out into the sea by a great ditch. And Buges is self from Coretus (an arme or branch of the
lake Mœotis) is disioyned, with a backe part full of crags and rocks. Riuers it receiueth, Buges,
Gerrhus, Hypanis, comming all from diuers querters: for Gerrhus parteth the Basilides and
Nomades. Hypanis, through the Nomades and the Hyleans, falleth into Buges by a channell
made by mans hand, but in his owne naturall channell into Coretus. The region of Scythia is
named Sendica. But in Carcinites, Taurica beginneth: which also in times past was enuironed
all about with the sea, wheresoeuer now there lie plains and flat fields. But afterwards it moun-
teth vp with huge hills. Thirtie nations there be in it: and of them 24 be Inlanders. Six townes,
Orgocyni, Carasceni, Assyrani, Tractari, Archilachitæ, and Caliordi. The very pitch and crest
F of the hill, the Scytotauri do hold. Bounded they are Westward, with Cherronesus; East-ward
with the Scythian Satarchi. In the coast next to Carcinites are these towns, Taphræ, in the ve-
ry streights of the demy Island: then, Heraclea, Cherronesus, endowed with franchises by the
Romans. A foretime it was called Megarice, and is the most ciuel & faireſt of all the rest of that
tract, as retaining still the names and fashions of the Greekes, and is besides compassed with a
wall

wall of fiue miles about. Then, the promontory Parthenium. A citie of the Tauri, Placia. The hauen Symbolon: the promontory Criu-metopon, ouer against Charambes a promontorie of Asia, running through the middle of Euxinus, for the space of 170 miles: which is the cause especially that maketh the forme abouesaid of a Scythian bow. Neere to it, are many hauens and lakes of the Tauri. The towne Theodosia, distant from Criu-Metopon 122 miles, and from Chersonesus 165 miles. Beyond, there haue been towns, Cyte, Cephyrium, Acre, Nympheum, and Dia. And the strongest of them all by many degrees, standeth yet still in the very entry of Bosphorus, namely, Pantecapium of the Milesians, from Theodosia 1035 miles: but from Cimmerum a town scituate beyond the Firth, a mile and a halfe as we haue said. And this is al the bredth there that diuideth Asia from Europe: which somtime is passeable ouer most-what on foot, namely, when the Firth is frozen and all on yce. The breadth of Bosphorus Cimmerius is 12 miles and a halfe. It hath vpon it these townes, Hermisium, Myrmecium; and within it, an Island Alopece. But along Mœotis, from the fartherst narrow land passage, which place is called Taphræ, vnto the mouth of Bosp horus, it containes 260 miles. On Taphræ side, the Continent within-forth is inhabited by the Anchetæ, among whom Hypanis springeth: and Neuri, where Borysthenes hath his head. Moreouer, the Geloni, Thussagetæ, Budini, Basilidæ, and the Agathyrsi, with blew haire on their heads. Aboue them, the Momades, and the Anthropophagi. On Buges side aboue Mœotis, the Sauromates and Essedones dwell, but along the borders euen as far as Tanais, the Mœotæ, of whom the lake was so called, and the vtmost on their backes the Arimaspi. Within a little appeare the Rhiphæan hils, and a countrey called Prerophoros, for the resemblance of certain wings or feathers, occasioned by the continuall fall of snow. A part of the world thus is condemned by dame Nature, and drowned in deepe and thick darkenes, dwelling within no other houses but the workes of frozen cold, and the ycie harbors of the chilling Northerne wind. Behind those hills and beyond the North pole, there is a blessed and happy people (if we may beleeue it) whom they call Hyperborei, who liue exceeding long, and many fabulous and strange wonders are reported of them. In this tract are supposed to be the two points or poles about which the world turns about, and the very ends of the heauens reuolution. For 6 moneths together they haue one entire day; and night as long, when the Sunne is cleane turned from them: but their day beginneth not at the spring Æquinoctiall (as the leaud and ignorant common people do imagine) and so continueth to the Autumne: for once in the yeere, and namely at our mid-sommer when the Sun entreth into Cancer, the Sun riseth with them: and once likewise it setteth, euen in the mid-winter with vs, when the Sun entreth Capricorne. The countrie is open vpon the Sunne, of a blissefull and pleasant temperature, void of all noisome wind & hurtfull aire. Their habitations be in woods and groues, where they worship the gods both by themselues, and in companies and congregations: no discord know they; no sicknes are they acquainted with. They neuer die, but when they haue liued long enough: for when the aged men haue made good cheere, and annointed their bodies with sweet ointments, they leape from off a certain rocke into the sea. This kind of sepulture, of all others is most happy. Some Writers haue seated them in the first part of the sea coasts in Asia, and not in Europe, for that indeed some be there resembling the like manners and customes, and euen so scituate, named Atocori. Some haue set them iust in the mids between both Sunnes to wit, the setting of it with the Antipodes, and the rising of it with vs: which cannot possibly be, considering so vast and huge a sea comming betweene. As for those that haue placed them no where but in the six moneths day-light, haue written thus much of them, That they sow in the morning, reape at noone, at sun-setting gather the fruits from the trees, and in the nights lie close shut vp within caues. Neither may we make doubt of that nation, since that so many Authors doe testifie, That they were wont to send the first fruits of their corne, as far as Delos to *Apollo*, whom aboue all others they honour. And virgins they were that had the carriage of this present; who for certaine yeeres were venerable, and courteously entertained of all nations, vntill such time as vpon breach of faithfull hospitalitie, they took vp an order to bestow those sacred oblations in the next marches of their neighbour borderers: and they againe to conueigh the same to their neighbours that confined vpon them, and so forward as far as to Delos. But soone after, this custome was for-let and cleane giuen ouer. The length of Sarmatia, Scythia, and Taurica, and of all that tract from the riuer Borysthenes, is 980 miles, the breadth 717, as *M. Agrippa* hath cast it. But I for my part suppose, that the measure of this part of the earth is vncertaine,

vncertaine: but after the order which we haue begun, let vs go forward with the rest behind of all this diuision: as for the pety seas thereof we haue truly shewed them already.

Chap. XIII.

¶ *The Islands Pontus.*

HElle spont hath no Islands to be spoken of, in Europe. In Pontus are two, a mile and halfe from Europ, and 14 miles from the mouth of the riuer, to wit, Cyaneæ, of others called Symplegades; and by report of fables they ran one into another: the reason was, because they being seuered by a small space betweene, to them that enter the sea full vpon them, they seemed twaine: but if they turned their eye a little aside from them, they made a shew as if they met together. On this side Ister there is one, pertaining to the Apolloniates, 80 miles from Bosphorus Thracius, out of which *M. Lucullus* brought *Apollo Capitolinus*. What are within the mouths of Ister we haue declared already. Before Borysthenes is the aboue named Achillea, called Leuce and Macaron. This, our moderne Cosmographers in these daies doe set 140 miles from Borysthenes, from Tyra 120: from the Island Peuce 50. It is in compasse about ten miles. The rest be in the gulfe Carcinites, namely Cephalonnesos, Rhosphodusa, and Macra. I cannot passe by the opinion of many writers, before we depart from Pontus, who suppose all the inland seas or Mediterranian arise from that head, and not from the streights of Gades: and they lay for their ground an argument not without some good probabilitie, because out of Pontus the sea alwaies floweth, and neuer ebbeth againe.

But now we are to depart from thence, that other parts of Europ may be spoken of: & when we are gone ouer the Riphœan hils, we must passe along close by the North Ocean, and keepe the left hand vntill we come to Gades. In which tract there are reported to be very many Isles without name: of which, as *Tymæus* reporteth, there is one before Scythia called Bannomanna, distant from Scythia one daies sailing: into which, in the temperate season of the spring, Amber is cast vp to the shore by the waues of the sea. All the other coasts are no otherwise marked and known but by vncertain heare-say. The North Ocean from the riuer Paropamisus, whereas it dasheth vpon Scythia, *Hecataeus* nameth Amarchium, which word in the language of that nation signifieth, Frozen. *Philemon* writeth, that the Cymbrians call it Morimarusa, *i. mortuum Mare*, the dead sea, euen as far as to the promontorie of Rubeæ: but all beyond forward, Cronium. *Xenophon Lampsacenus* saith, That three daies sailing from the Scythian coast there is the Island Baltia, of exceeding greatnesse. The same doth *Pythias* name Basylia. There be also named the Isles Oonæ, wherein the Inhabitants liue of birds eggs and otes. Others also, wherin men are born with horse feet, called thereupon Hippopades. Others againe of the Panoti, who being otherwise naked, haue mighty great eares that couer their whole bodies. And now forward we begin at the nation of the Ingevoni, the first of all the Germanes in those parts, to discouer all vpon more sure and euident report. There is the exceeding great mountain Sevo, not inferior to the high hills Riphæi, which maketh a mighty huge gulfe, euen as far as the Cimbrians promontory, called Codanus: it is full of Islands, of which the goodliest of all is Scandinavia, the bignesse whereof is not yet discouered. A part only thereof, as much as is knowne, the nation of Heleviones doth inhabit in 500 villages, who call it a second world. And as it is thought, Enigia is no whit lesse. Some say that these parts, as far as to the riuer Vistula, is inhabited by the Sarmatians, Venetians, Scyrians, and Hirrians: also that the gulfe of the sea is called Clylipenus: and that in the mouth or entrance of it is the Island Latris. Also that not far from it there is another arme of the sea bounding vpon the Cimbrians. The promontory of the Cimbrians shooting far into the seas, maketh a demy Island, which is called Cartris: from which coast 23 Islands haue been discouered and known by the Roman armies; the noblest of them are Burchana, called of our countrey men Fabaria, of the plenty of a pulse called Beans, growne there of it selfe vnsowne. Likewise Glessaria, so called by the soldiers, of Amber: but of the barbarous people Austrania; and besides them Actania. Along this sea coast, vntil you come to the riuer Scaldis, the German nations do inhabit, but the measure of that tract cannot easily be declared, such vnmeasurable discord and difference there is amongst Writers. The Greeks and some of our owne country haue deliuered the coast of Germanie to be 2500 miles about. *Agrippa* again ioyning with it Rhetia and Noricum, saith that it is in length 886 miles,

and in bredth 268. And verily of Rhœtia alone, the bredth well-neere is greater, at leastwise at the time that it was subdued, and the people departed out of Germanie: for Germany many yeares after was discouered, and yet not all of it known throughly. But if it be lawful to gesse, there wil not be much wanting in the coasts & compasse, according the opinion of the Greeks; nor in the length set down by *Agrippa*.

Chap. XIV.

¶ *Germanie.*

OF Germanes there be fiue kindes: the Vindili, part of whom be the Burgundians, Varini, Carini, and Gurtones. A second sort, the Ingævones, part of whom be the Cimbri, Teutoni, and people of the Cauchi. The next to them be the Istævones, and part of them be the Cimbri. Then the midlanders, the Hermiones, among whom are the Suevi, Hermunduri, Chatti, and Cherusci. The fift are the Peucini, the Basternæ, bordering vpon the aboue-named Dacæ. Faire riuers that run into the Ocean, to wit, Guttalus, Viftillus, or Viftula, Albis, Visurgis, Amisius, Rhenus, Mosa. And within-forth the Hircynium hill, inferiour to none in estimation, standeth to gard and include them.

Chap. XV.

¶ *Islands in the Gaules Ocean.*

VPon the very Rhene it selfe, for 100 miles almost in length, lieth the most noble Island of the Batavi and Cannenusates: as also others of the Frisians, Cauchians, Frisiabones, Sturij, and Marsalij, spred within Helius and Flevus, for so be the mouthes into which Rhenus gushing, diuideth it selfe; and is discharged from the North into certain lakes: from the West into the riuer Mosa. But in the middle mouth between, hee beareth a small current and channell, and keepeth his owne name.

Chap. XVI.

¶ *England and Ireland.*

OVer against this tract lieth Britannia, betweene the North and West, being an Island renowned both in Greeke and Roman records: opposite it is vnto Germanie, Gaule, and Spaine, the greatest parts by far of all Europe, and no small sea betweene. It was sometime named Albion, when all the Isles were called Britanniæ, of which anon we wil speak. This Island is from Gesforiacum, a coast towne of Morini, fifty miles, taking the next and shortest cut. In circuit, as *M. Pitheas* and *Isidor* report, it containeth 3825 miles. And now for these thirtie yeares well-neere, the Romane Captaines grow into farther knowledge thereof, and yet not beyond the forrest of Caledonia, as neere as it is. *Agrippa* supposeth that it is in length 800 miles, and in bredth 300. Also that Ireland is as broad, but not so long by 200 miles. This Ile is seated aboue it, and but a very short cut or passage distant from it, to wit, 30 miles from the people Silures. Of other Islands in this Ocean there is none by report in circuit more than 125 miles. Now there be Orcades 40, diuided asunder by small spaces betweene: Acmodæ 7, and 30 Hæbudes. Also betweene Britaine and Hibernia, Mona, Monapia, Ricnea, Vectis, Silimnus, and Andros: but beneath them, Siambis and Axantos: and on the contrary side towards the Germane Sea there lie scattering the Glessariæ, which the later Greeke Writers haue named Electrides, for that Amber was there ingendred or bred. The farthest of all knowne or spoken of, is Thule, in which there be no nights at all, as we haue declared, about Midsummer, namely when the Sun passeth through Cancer: and contrariwise no daies in mid-winter: and each of these times they suppose do last six moneths, all day or all night. *Timæus* the Historiographer saith, that farther within-forth, and six daies sailing from Britain, there lieth the Island Mictis, in which white lead grows; and that the Britans do saile thither in winter vessels, couered with leather round about, and wel sowed. There be that make mention of others beside, to wit, Scandia, Dumna, Bergos, and Nerigos the biggest of all the rest, from the which men saile to Thule. Within one daies sailing from Thule is the frozen sea, named of some Cronium.

CHAP.

Chap. XVII.

¶ *Gallia.*

ALl Gallia, by one name called Comata, is diuided into three kindes of people, and those seuered one from the other by riuers especially: to wit, Belgica, from Scaldis to Sequana: Celtica, from it to Garumna; and this part of Gallia is named Lugdunensis. From thence to the lying out of the mountaine Pyrenæus, Aquitania, formerly called Aremorica. *Agrippa* hath made this reckoning and computation of all Gaul generally, to wit, lying between Rhene, Pyrenæus, the Ocean, and the hills Gebenna and Iura; whereby hee excludeth Narbonensis Gallia, that is in length 420 miles, and in bredth 313. Next to Scaldis there inhabited the vtmost borderers, the Toxandri, vnder many names: then the Menapij, Morini, and Oromanici, ioyning vpon the tract or territorie called Gesforiacus: the Brinnani, Ambiani, Bellonici, and Hassi. But farther within-forth, the Castologi, Atrebatis, and Neruij, free states: the Veromandui, Sueroni, and Suessiones, likewise free: the Treviri free before-time: the Lingones confederates, the Remi confederats also: the Mediomotricæ, the Sequani, the Raurici, & Helvetij. Colonies two, Equestris and Rauriaca. Moreouer, of Germane nations in the same Prouince that dwell neere Rhene, the Nemetes, Trivochi, and Vangiones: then the Vbij, Colonia; Agrippensis, Gugerni, Batavi, and those whom we spake of in the Islands of Rhene.

Chap. XVIII.

¶ *Lugdunensis Gallia.*

LVgdunensis Gallia containeth the Luxovij, Velocasses, Galleti, Veneti, Abricatui, Ossismij, and the noble riuer Ligeris: but a more faire and goodly demy-Island, running forth into the Ocean, from the very marches of the Ossismij, hauing in circuit 625 miles, with the necke thereof 125 miles broad. Beyond it dwell the Nannites. Within-forth, the Hœdni confederats, the Carnuti likewise confederats, the Boij, the Senones, the Aulerici, syrnamed Eburovices, and the Cenomannes and Meldi, free States. Parrhisij, Trecasses, Andegani, Viducasses, Vadicasses, Vnelli, Carioselites, Drabhudi, Rhedones, Turones, Iteslui, and Secusiani, free States, in whose countrey standeth the Colonie Lugdunum.

Chap. XIX.

¶ *Aquitania.*

TO that prouince of Gaule which is called Aquitania, belong the Ambilatri, Anagnutes, Pictones, the Santones, Bituriges, named also Vibisci Aquitani, whereof the Prouince tooke name, and the Sediboniates. Then such as were enrolled into townes hips from diuers parts, to wit, Begerri, Tarbeli, who came vnder foure ensignes. Cocossati vnder 6 ensignes, Venami, Onobrisates, Belendi, and the forest Pyrenæus. Beneath them, Monesi, Osquidiales, Mountainers, Sibillates, Camponi, Bercorates, Bipedimui, Sassumini, Vellates, Vornates, Consoranni, Ausci, Elusates, Sottiates, Osquidates in the champion and plaine country, Succasses, Latusates, Basabocates, Vassei, Sennates, Cambolectri, Agesinales, ioyning to the Pictones. Then the Bituriges free, called also Cubi. Next to them, Lemovires, Arverni free, and Gabales. Again, those that confine and border vpon the prouince Narbonensis, the Ruthenes, Caduni, Autobroges, & the Petrogorij, diuided from the Tolosanes by the riuer Tarme. Seas about the coasts, vpon Rhene the North Ocean: between it and Sequana the Britan ocean: between it and Pyrenæus, the Gaule Ocean. Islands many, to wit of the Veneti, called also Veneticæ: and in the gulfe of Aquitane, Vliarus.

Chap. XX.

¶ *The hither Prouince of Spaine.*

AT the Promontorie of Pyrenæus beginneth Spain, narrower not only than Gaule, but also than it selfe (naturally) so huge a quantitie is wrought into it, while the Ocean of one coast, the Iberian sea on the other, do cling and presse the sides together. The very hills

of Pyrenæus, which from the East spred all the way to the Southwest, make Spaine shorter on the North side than the South. The next marches of this higher prouince is the same that the tract of Tarracon, namely from Pyrenæus along the Ocean, the forrest and mountains of Vascones. And first in this part you finde these townes: namely in the country of the Varduli, Olarso, Morosgi, Menosca, Vesperies, the port towne Amanum, where now is Flaviobriga, and a colony of nine cities. The region of the Cantabri, the riuer Sada, the port town of Victoria, inhabited by the Iuliobrigenses. From that place the fountaines of Iberus, 40 miles. The hauen Biendium, the Origeni entermingled with the Cantabri. Their hauens Vesei and Veca: the countrey of the Astures, the towne Nœga, in the demy Island Pesicus. And then the countie Lucensis, and so from the riuer Navilubio, the Cibarci, Egovarri syrnamed Namarini, Iadoni, Arrotiebæ, the promontorie Celticum. Riuers, Florius and Nelo. Celtici syrnamed Neriæ: and aboue them the Tamarici, in whose demy Island are 3 Altars called Sestianæ, dedicated to *Augustus*, Cœpori, and the towne Nœla. The Celtici, syrnamed Præsamarci, and Cileni. Of Isles worth the naming, Corticata and Aunios. From the Cileni, the county town of the Bracæ, Heleni, Gravij, the castle Tyde, all discended from the Greekes: the Islands Ciceæ, the faire town Abobrica, the riuer Minius, with a broad mouth 4 miles ouer, the Leuni, Seurbi, Augusta a town of the Bracæ: and aboue them also, Gallæcia, the riuer Limia. Also the riuer Durius, one of the greatest in Spaine, springing in the Pelendones country, & running hard by Numantia, and so on, through the Arevaci and Vaccæi, dividing the Vetones from Asturia, and the Gallæcians from Lusitania: and there also it keepeth off the Turduli from the Bracari. All this region aboue-said from Pyrenæus, is full of mettall mines, to wit, gold, siluer, iron, lead, as well blacke as white, *i.* tinne.

Chap. XXI.

¶ *Lusitania.*

AT the riuer Durius begins Lusitania, wherin are Turduli the old, Pesuri, the riuer Vacca, the towne Talabrica, the towne and riuer Minium. Townes, Conimbrica, Olisippo, Eburo, Britium: from whence there runs out into the sea with a mighty cape, the promontorie which some haue called Artabrum; others, the Great; and many, Olisiponense, of the towne, making a diuision of land, sea, and aire aboue. In it is the side of Spaine determined and bounded, and from the compasse of it beginneth the forefront thereof.

Chap. XXII.

¶ *Islands in the Ocean.*

ON the one hand is the North and the Gauls Ocean: on the other, the West and the Atlanticke Ocean. The shooting forth of the promontorie aforesaid some haue reported to be 60 miles, others 90. From thence to Pyrenæus there be writers not a few, who say it is 1250 miles, and that there is a nation of the Atabri, which neuer was, with a manifest error. For they haue set in this place by exchanging some letters, the Artotrebæ, whome wee named before the promontorie Celticum. They haue erred also and missed in certain famous riuers. From Minius aboue named, as *Varro* saith, Æminius is 200 miles distant (which some men take to be elsewhere, and call it Limæa) named of men in old time Oblivionis, and whereof goeth many a tale. From Durius to Tagus is 200 miles, and comes between. This Tagus is a riuer much renowned for the sand that yeelds gold. 160 miles from it the promontory Sacrum runs out from the middle front in maner of Spain: and 14 miles *Varro* saith it is from it to the mids of Pyrenæus. But from Ana, by which we haue separated Lusitania from Bætica, 226 miles, adding therto from Gades 102 miles. Nations, Celtici, Varduli, and about Tagus, the Vettones. From Ana to Sacrum the Lusitanes. Memorable townes, from Tagus in the coast side, Olisippo, of good note for the Mares that conceiue there by the West wind. Salatia, with addition of Vrbs Imperatoria, and Merobrica: the promontory Sacrum, & another called Cæneus: towns, Ossonoba, Balsa, and Myrtius. The whole prouince is diuided into three counties or iudiciall courts of Assises, Emeritensis, Pacensis, and Scalabitanus. It containeth in all fiue and forty States, wherein be fiue Colonies, one Borough Towne of Romane Citisens, three enfranchised

chised with the liberties of old Latium. Stipendiaries or Tributaries 36. Moreouer, the Colonies be thus named, Augusta Emerita: and vpon the riuer Ana, Metallinensis, Pacensis, Norbensis, named also Cæsariana. To it are layed and inrolled Castra Iulia and Castra Cæcilia. The fift is Scalabis, called Præsidium Iulium. The free borough of Roman citises, Olyssippo, named also Felicitas Iulia. Townes of the old Latium liberty, Ebora, which likewise was called Liberalitas Iulia: Myrtilis also and Salatia, which we haue spoken. Of Tributaries, such as I am not loth to name, beside the aboue said in the additions of Bætica, Augustobrigenses, Ammienses, Aranditani, Axabricenses, Balsenses, Cæsarobricenses, Caperenses, Caurenses, Colarni, Cibilitani, Concordienses, the same that Bonori, Interausenses, Lancienses. Mirobrigenses, syrnamed Celtici, Medubricenses, the same that Plumbarij, Ocelenses, who also are Lancienses, Turtuli, named Barduli and Tapori. *M. Agrippa* hath written, that Lusitania, together with Asturia and Gallæcia, is in length 540 miles, and in bredth 526. But all Spain from the two promontories of Pyrenæus, along the seas, takes vp in circuit of the whole coast, 2900 miles, and by others 2700. Ouer against Celtiberia be very many Isles, called of the Greekes Cassiterides, for the plenty of lead which they yeeld: and iust against the promontorie of the Arrotrebæ, six named Deorum [*i.* of the gods] which some haue called Fortunatæ. But in the very point or cape of Bætica, from the mouth of the firth 75 miles, lieth the Island Gades, 12 miles long, as *Polybius* write th, and three miles broad. It is from the maine, where it is neereste, lesse than * 700 paces, in other places aboue seuen miles. The whole Isle it selfe containes the space of 15 miles in circuit. It hath within it a towne of Roman citisens named Augusta, Vrbs Iulia Gaditania. On that side that regards Spain, within 100 paces lieth another Island three miles long and one broad, wherein formerly was the towne Gades. The name of this Island, after *Ephorus* and *Thilistides*, is Erythia: but according to *Tymæus* and *Silenus*, Aprodisias: the naturall home-bred inhabitants call it Iunonis The bigger of these two Gades, as saith *Tymæus*, was by them called Cotinusa, our countrymen name it Tarteses, the Carthaginians * Galedir, which in the Punicke language signifieth the * number of seuen. Erithia the other was called, because the Tirians, who were the first inhabitants, were reported to haue had their first beginning out of the red sea Erythræum. Some thinke that *Geryon* here dwelt, he whose droues of cattell *Hercules* had away. Some againe thinke it is another, ouer against Lusitania, and there sometime so called.

* I esse than 3 quarters of a miles.

* Or Gadir.

* *Septem*, or as some read, *Septum*, *i.* a parke or enclosure.

Chap. XXIII.

¶ *The measure of all Europe.*

HAuing finished our circuit about Europ, we must now yeeld the totall summe and complete measure of it in the whole, that such as are desirous of knowledge be not to seek in any one thing. *Artemidorus* and *Isidore* haue set downe the length thereof from Tanais to Gades, 8401 4 miles, *Polybius* hath put down the bredth thereof, from Italy to the Ocean 1150 miles, for as then the largenesse thereof was not knowne. Now the very bredth of Italy alone by it selfe (as we haue shewed) is 1220 miles to the Alps: from whence by Lyons to the Britaine part of the Morini (which way *Polybius* seemeth to take his measure) is 1168 miles. But the more certaine measure and the longer is directed from the said Alps to the West, and the mouth of the Rhine, through the place called Castra Legionum Germaniæ, 1243 miles. Now from henceforward we will describe Africke and Asia.

THE FIFTH BOOKE OF THE HISTORIE OF NATVRE,

WRITTEN BY C. PLINIVS SECVNDVS.

The description of Africke.

AFricke the Greekes haue called Lybia, euen all that tract from whence the Lybian sea before it beginneth, and endeth in the Ægyptian. No part of the earth receiueth fewer gulfes and armes of the sea, in that long compasse of crooked coasts from the West. The names as well of the Nations as towns there be of all others most hard to be pronounced, vnlesse it be in their owne tongues, and againe they be castiles and forts for the most part that they dwell in.

CHAP. I.

¶ *Mauritania.*

AT the beginning, the lands of Mauritania vntill the time of *C. Cæsar*, [i. *Caligula*] sonne of *Germanicus*, were called kingdomes: but by his cruelty diuided it was into two prouinces. The vtmost promontorie of the Ocean is named of the Greeks Ampelusia: the townes therein were Lissa and Cotes, beyond *Hercules* pillars. Now in it is Tingi, sometime built by *Antæus*: and afterward by *Claudius Cæsar* when he made a Colonie of it, it was called Traducta Iulia. It is from Belone a towne in Bætica by the next and neereſt paſſage ouer sea thirty miles. Fiue and twenty miles from it in the Ocean coast standeth a Colonie erected by *Augustus*, now Iulia Constantia, exempt from the dominion and iurisdiction of the Kings of Zilis, and commanded to go for law and iustice as far as Bætica. And two and thirty miles from it, Lixos, made a Colony by *Claudius Cæsar*; whereof in old time there went many fabulous and loud lying tales. For there stood, they saw, the royall pallace of *Antæus*: there was the combat betweene him and *Hercules*: there also were the gardens and hort-yards of the Hesperides. Now there floweth thereinto out of the sea a certain creek or arme thereof, and that by a winding channell, wherein men now take it that there were Dragons seruing in good stead to keep and gard the same. It incloseth an Iland within it selfe, which, notwithstanding the Tract thereby be somewhat higher, is onely not ouerflowed by the sea tides. In it there standeth erected an altar of *Hercules*: and setting aside certaine wilde Oliues, nothing else is to be seen of that goodly groue, reported to beare golden Apples. And in good faith lesse may they wonder at the strange lies of Greece, giuen out of these and the riuer Lixus, who would but thinke how of late our countreymen haue deliuered some fables of the same things as monstrous well-neere: to wit, That this a most strong and mighty city, and bigger than great Carthage: moreouer, that it is scituate right against it, and an infinite way well-neere from Tingi: and other such like, which *Cornelius Nepos* hath been most eager to beleeue. From Lixus forty miles in the midland part of the main stands Babba, another Colony of *Augustus*, called by him Iulia in the field or champian: also a third 75 miles off, called Banasa, but now it hath the addition of Valentia. 35 miles from it is the towne Volubile, iust in the mid way between both seas. But in the coast and borders thereof, fifty miles from Lixus, runneth Subur a goodly plenteous riuer, and nauigable neere to the Colony Banasa. As many miles from it is the towne Sala, standing vpon a riuer

A a riuer of the same name, neere now vnto the wildernesse, much infested and annoied with whole heards of Elephants, but much more with the nation of the Autololes, through which lies the way to Atlas the most fabulous mountaine of all Africk. For writers haue giuen out, that this hill arising out of the very midst of the sea sands, mounteth vp to the skie, all rough, ill fauored, and ouergrowne on that side that lieth to the shore of the Ocean, vnto which it gaue the name; and yet the same is shadowie, full of woods, and watered with veines of spouting Springs that way which looketh to Africke, with fruitfull trees of all sorts, springing of the own accord, and bearing one vnder another, in such sort, that at no time a man can want his pleasure and delight to his full contentment. Moreouer, that none of the inhabitants there are seene all day long: all
B is still and silent, like the fearfull horror in desert wildernesse: and as men come neerer and neerer vnto it, a secret deuotion ariseth in their hearts, and besides this feare and horrour, they are lifted vp aboue the clouds, and euen close to the circle of the Moone. Ouer and besides, that the same hill shineth oftentimes with many flashes of fires, and is hanted with the wanton lasciuious Ægipanes and Satyres, whereof it is full, that it resoundeth with noise of Haut-boies, pipes, and fifes, and ringeth againe with the sound of tabers, timbrels, and cymbals. These be the reports of great & famous writers, to say nothing of the labors and works both of *Hercules* and *Perses* there; and to conclude, that the way vnto it is exceeding great, and not certainely knowne. Bookes there were besides of *Hanno*, a great captain and commander among the Carthaginians, who in the time of the most flourishing state of Carthage, had a charge and commission to discouer and survey the whole compasse of Africk. Hi[illegible] most of the Greeks as well
C as our countreymen following, among some other fabulous stories, haue written that hee also built many cities there; but neither memoriall vpon record, nor any token of them at all is left extant. Whiles *Scipio Æmylianus* warred in Africk, *Polybius* the writer of the Annales, receiued of him a fleet: who hauing saled about of purpose to search into that part of the world, hath put thus much downe in writing, that from the said mountaine West, toward the forrest ful of wild beasts which Africk breedeth, vnto the riuer Anatis, are 485 miles. And from thence to Lixus 205. *Agrippa* saith, that Lixus is distant from the streights of Gades 112 miles. Then, that there is an arme of the sea called Saguti. Also a towne vpon the promontory, Mutelacha. Riuers, Subur and Sala. Moreouer, that the hauen Rutubis is from Lixus 313 miles. And so forward to the Promontorie of the Sun. The port or hauen Risardir; the Gætulians, Autololes, the riuer
D Cosenus, the nation of the Scelatites and Massalians. The riuers Masatal and Darat, wherein Crocodiles are ingendred. Then forward, that there is a gulfe of 516 miles, inclosed within the promontory or cape of the mountain Barce, running along into the West, which is called Surrentium: after it, the riuer Palsus, beyond which are the Æthiopians Perorsi, & at their back are the Pharusi. Vpon whom ioine the midlanders, to wit, the Gætulianders. But vpon the coast are the Æthyopian Daratites, the riuer Bambotus ful of Crocodiles & Hippopotames [i. Water-horses.] From which, he saith, That there is nothing but mountains all the way as far as to that which we call Theon-Ochema (The gods chariot.) Then, in sailing nine daies and nights to the promontorie Hesperium, he hath placed the mountain Atlas in mid way thereof, which by all other writers is set downe to be in the vtmost marches of Mauritania. The first time that the
E Romans warred in Mauritania, was in the time of prince *Claudius* Emperor: at what time as *Ædemon* the freed seruant of king *Ptolomæus*, by *C. Cæsar* slaine, went about to reuenge his death: for as the barbarous people retired and fled back, certaine it is that the Romans came as far as to the hill Atlas. And not only such Generals as had bin Consuls, and were of the Senatours degree and calling, who at that time managed and conducted the wars, but knights also and gentlemen of Rome, who from that time had gouernment and command there, tooke it for an honor and glory, that they had pierced and entred into Atlas. [* Fiue Romane Colonies, as wee haue said, be in that prouince] and by that common fame and report, there may seeme to lie a thorow faire thither. But that is found for the most part by daily experience, most deceiueable of all things else; because persons of high place and great worth, when they are loath to search
F out narrowly into the truth of matters, sticke not for shame of ignorance, to giue out vntruths: and neuer are men more credulous and apt to beleeue and be deceiued, than when some graue personage fathereth a lie. And verily I lesse maruell, that they of gentlemens degree, yea, and those now of Senators calling, haue not come to the certaine knowledge of some things there: seeing they set their whole affection and mind vpon nothing but excesse and riot; which how powerfull

* It seemeth that this clause is to be set in the beginning of the next chapter.

powerfull it is and forcible, is seen by this most of all, when forests are sought out far and neere for Iuory and Citron trees; when all the rocks in Getulia are searched for Murices and Purpuræ [shell fishes that yeeld the purple crimson colour.] Howbeit, the natural inhabitants of that country do write, That in the sea coast 150 miles from Sala, there is the riuer Asana, that receiueth salt water into it, but hath in it a goodly faire hauen; and not far from it another fresh riuer, which they call Fut: from which to Dyris (for that is the name in their language of Atlas, by a generall consent) are 200 miles, with a riuer comming betweene, named Vior. And there, the speech so goeth, are to be seene the certain tokens of a ground somtimes inhabited; to wit, the reliques of vine-yards and date tree groues. *Suetonius Paulinus* (a Consull in our time) who was the first Roman leader, that for certaine miles space went ouer Atlas, also hath reported verily as touching the height thereof, that with the rest: and moreouer, that the foot thereof toward the bottom, stand thick and ful of tall woods, with trees therein of an vnknown kinde, but the heigth of them is delectable to see to, smooth and euen without knots, the leaues & branches like Cypresse, and besides the strong smell they yeeld, are couered all ouer with a thinne downe, of which (with some help of Art) fine cloath may be made, such as the silk-worm doth yeeld. That the top and crest thereof is couered ouer with deepe snow euen in Sommer time. Moreouer, that he reached vp to the pitch of it at the tenth daies end, & went beyond it, as far as a riuer called Niger, through wildernesses ful of blacke dust; where otherwhiles there stood out certaine cliffes, and craggie rocks, as they were scortched and burnt; and that those places by reason of partching heat were not habitable, albeit a man made triall thereof in the winter season: furthermore, that the pesants who dwelt in the next forests, were pestred with Elephants, wilde beasts, and serpents of all sorts; and those people were called Canarij; for that they and dogs feed together one with another, and part among them the bowels of wild beasts. For certaine it is knowne, that a nation of the Æthyopians whom they cal Peroesi, ioineth vpon them. *Iuba* the father of *Ptolomæus*, who before-time ruled ouer both Mauritanes, a man more memorable and renowned for his study and loue of good letters, than for his kingdome and royall port, hath written the like concerning Atlas: and he saith moreouer, that there is an herb growing there called Euphorbia, of his Physitions name that first found it: the milkie iuice whereof he praiseth wondrous much, for to cleare the eies, and to be a preseruatiue against all serpents and poisons whatsoeuer, and thereof hath he written a treatise, and made a book by it selfe: thus much may suffice, if it be not too much, as touching Atlas.

Chap. II.

¶ *The prouince Tingitania.*

THe length of the Prouince Tingitania taketh 170 miles. The nations therin be these: the Mauri, which in times past was the principall, and of whom the prouince took name: and those most writers haue called Marusij. Being by war weakened and diminished, they came in the end to a few families only. Next to them were the Massæsuli, but in like manner were they consumed. Now is the prouince inhabited by the Getulians, Bannurri, and the Autololes, the most valiant and puissant of all the rest. A member of these were somtime the Vesuni, but being diuided from them, they became a nation by themselues, and bounded vpon the Æthiopians. The prouince naturally full of mountains Eastward, breedeth Elephants. In the hill also Abila, and in those which for their euen and equal height they cal, The 7 brethren: and these butt vpon Abila, which looketh ouer into the sea. From these beginneth the coast of the Inward sea. The riuer Tinuda nauigable, and a town somtime (of that name.) The riuer Laud, which also receiueth vessels. The town Rusardie, and the hauen. The riuer Malvana nauigable. The towne Siga iust against Malacha scituate in Spaine: the Royall seat of *Syphax*, and now the other Mauritania. For a long time they kept the names of KK. so as the vtmost was called Bogadiana: and likewise Bocchi, which now is Cæsarienses. Next vnto it is the hauen, for the largenesse thereof called Magnus, with a towne of Roman citizens. The Riuer Muluca, which is the limit of Bocchi and the Massæsuli. Quiza Xenitana, a towne of strangers: Arsennaria, a towne of Latines three miles from the Sea: Carcenna, a Colonie of *Augustus*, erected for the second Legion: likewise another Colonie of his planted with the Pretorian band, Gunugi, and the promontorie of *Apollo*. And a most famous towne there Cæsarea, vsually before-time called Iol, the Royall Seat of King *Iuba*: endowed by *Claudius* the Emperour

A rour of happie memorie, with the franchises and right of a Colonie, at whose appointment the old souldiers were there bestowed. A new towne, Tipasa, with the grant of the liberties of Latium. Likewise Icosium, endowed by *Vespasian* the Emperour, with the same donations. The colonie of *Augustus* Rusconiæ, and Rusicurium, by *Claudius* honoured with the free burgeoisie of the citie. Rusoezus, a colonie of *Augustus*. Salde, a Colonie of the same man. Igelgili also, and Turca, a towne seated vpon the sea and the riuer Amsaga. Within the land, the Colonie Augusta, the same that Succubar; and likewise Tubrisuptus. Cities, Timici, Tigauæ, Riuers, Sardabala and Nabar. The people Macurebi; the riuer Vsar, and the nation of the Nabades. The riuer
B Ampsaga is from Cæsarea 233 miles. The length of Mauritania both the one and the other together, is 839 miles; the breadth 467.

Chap. III.

¶ *Numidia.*

NExt to Ampsaga is Numidia, renowned for the name of *Masanissa*; called of the Greekes the land Metagonitis. The Numidian Nomades, so named of changing their pasture, who carry their cottages or sheds (and those are all their dwelling houses) about with them vpon waines. Their townes be Cullu and Rusicade, from which 48 miles off within the Midland parts, is the colonie Cirta, surnamed of the Cirtanes: another also within and a free bo-
C rough town, named Bulla Regia. But in the vtmost coast, Tacatua, Hippo Regius, and the riuer Armua. The towne Trabacha, of Roman citizens: the riuer Tusca, which boundeth Numidia, and besides the Numidian marble, and great breed of wilde beasts, nothing is there else worth the noting.

Chap. IV.

¶ *Africa.*

FRom Tusca forward, you haue the region Zeugitana, and the countrey properly called Africa. Three promontories; first the White; then anon that of *Apollo* ouer-against Sardinia: and a third of *Mercurie* opposite to Sicilie; which running into the sea make two creekes:
D the one Hipponensis, next to the towne which they call Hippo raised; the Greeks name it Diarrhyton, for the little brooks and rils that water the grounds: vpon this, there bordereth Theudalis, an exempt towne from tribute, but somewhat farther from the sea side; then the promontory of *Apollo*. And in the other creek, Vtica, a towne of Roman citizens, ennobled for the death of *Cato*; and the riuer Bagrada. A place called Castra Cornelia: and the colony Carthago, among the reliques and ruines of great Carthage, and the colony Maxulla: towns, Carpi, Misna, and the free borough Clupea vpon the promontorie of *Mercurie*. *Item*, free townes, Curubis, and Neapolis. Soone after ye shall meet with another distinction of Africke indeed. Libyphœnices are they called, who inhabit Byzacium; for so is that region named; containing in
E circuit 250 miles, exceeding fertile and plenteous, where the ground sowne yeeldeth again to the husband-man 100 fold increase. In it are free townes, Leptis, Adrumetum, Ruspina and Thapsus: then Thenæ, Macomades, Tacape, Sabrata, reaching to the lesse Syrtis: to which, the length of Numidia and Africa from Amphaga, is 580 miles: the breadth, of so much thereof as is knowne, 200. Now this part which wee haue called Africke, is diuided into prouinces twaine, the old and the new; separated one from the other by a fosse or ditch brought as farre as to Thenæ, within the Africane gulfe, which towne is 217 miles from Carthage: and that trench *Scipio Africanus* the second, caused to be made, & bare halfe the charges together with the KK. The third gulfe is parted into twaine, cursed and horrible places both, for the ebbing and flowing of the sea, and the shelues betweene the two Syrtes. From Carthage to the nearer of them, which is the lesse, is 300 miles by the account of *Polybius*: who saith also, that the said
F Syrte is for 100 miles forward dangerous, and 300 about. By land also thither, the way is passeable by obseruation of the Stars, at one time of the yeare onely, and that lyeth through desert sands and places full of serpents. And then you meet with Forrests replenished with numbers of wilde beasts. And within-forth Wildernesses of Elephants: and soone after, waste deserts euen beyond the Garamantes, who from the Augilæ are distant twelue daies iourney.

Aboue

Aboue them was the nation of the Psylli: and aboue them the lake of *Diomedes* enuironed with desarts. Those Augylæ themselues are seated well neere in the middle way from Æthyopia, which bendeth Westward, and the countrie lying between the two Syrtes, with equall distance between of both sides: but the shore betweene the two Syrtes is of 250 miles. There standeth the citie Ocensus, the riuer Cinyps and the countrie. Townes, Neapolis, Taphra, Abrotonum, the other Leptis, called also the great. Then the greater Syrtis, in compasse 625 miles, and in direct passage 313. Next to it, there inhabit the people Cisipades. In the inmost gulfe was the coast of the Lotophagi, whom some haue called Alachroas, as far as to the alters of Phylæna, and of sand are they. Next to them, not farre from the Continent, the vast and wide Meere admitteth into it the riuer Triton, and taketh the name of him: but *Callimachus* calleth it Pallantias, and saith it is on this side the lesser Syrtes; but many place it betweene both Cyrtes. The promontory that encloses the bigger, is named Boryon. Beyond it is the prouince Cyrenaica. From the riuer Ampsaga to this bound, Africk contains 26 States, who are subiect to the Romane Empire: among which are six colonies besides the aboue-named, Vthina and Tuburbis. Townes endowed with Franchises of Roman citizens 15. Of which those in the midland parts, worthy to be named, are Azuritanum, Abutucence, Aboriense, Canopicum, Chilmanense, Simittuense, Thunusidense, Tuburnicense, Tynidrumense, Tribigense, Vcitana twain, the greater and the lesse, and Vagiense. One towne enioying the liberties of Latium, Vsalitanum. One tributary or pensionary towne neere Castra Cornelia, paieth custome and duties to Rome. Free townes 30, of which there are to be named within-forth, Arolitanum, Acharitanum, Auinense, Abziritanum, Canopitanum, Melzitanum, Madaurense, Salaphitanum, Tusdritanum, Tiriceense, Tiphicense, Tunicense, Theudense, Tagestense, Tigense, Vlusibritanum, another Vagense, Vigense and Zamense. The rest may well be called not only cities, but also for the most part, Nations, namely the Natadontes, Capsitani, Misulani, Sabarbares, Massili, Misiues, Vamacures, Ethini, Massini, Marcubij, and Gætulia all and whole, euen to the riuer Nigris, which parteth Affricke and Æthiopia.

Chap. V.

¶ *Cyrene.*

THe region Cyrenaica, called also Pentapolitana, is famous and renowned for the Oracle of *Hammon*, which is from Cyrenæ 400 miles, for the fountaine of the Sunne, and principally for 5 cities, Berenice, Arsinoe, Ptolemais, Apollonia, and Cyrene it selfe. Berenice standeth vpon the vtmost winding and nouke of Syrtis, called sometim the city of the aboue-named Hesperides, according to the wandering tales of Greece. And before the towne, not far off, is the riuer Lethon, the sacred groue where the hort-yards of these Hesperides are reported to be. From Leptis it is 385 miles. From it stands Arsinoe, vsually named Teuchira, 43 miles: and from thence 22 miles, Ptolemais, called in old time Barce. And then 250 miles off the promontory Phycus runs out along the Creticke sea, distant from Tænarus a cape of Laconia, 350 miles: but from Creet it selfe, 125 miles. And after it Cyrene, 11 miles from the sea. From Phycus to Apollonia is 24 miles: to, Cherronesus 88: and so forth to Catabathnus 216 miles. The inhabitants there bordering, be the Marmaridæ, stretching out in length almost from Pa-rætonium to the greater Syrtis. After them the Araraucles: and so in the very coast and side of Syrtis, The Nasamones, whom before-time the Greekes called Mesammones by reason of the place, for that they were seated in the middest betweene the two quicke sands. The Cyrenaick countrie, for the space of 15 miles from the sea side, is fruitfull for trees: and for the same compasse within the land, but for corne onely: but then for 30 miles in bredth, and 250 in length, for the gum Laser and nothing else. After the Masamones, the Hasbitæ and Masæ do liue. Beyond them the Hammanientes, eleuen daies iournie from the greater Syrtes to the West, and euen they also euery way are compassed about with sands: howbeit they find without much ado pits almost in cubits deepe, for that the waters there of Mauritania doe ouerflow. Houses they make themselues of salt, hewed out of their owne hils in maner of stone. From these to the Troglodites, in the Southwest coast is foure daies iournie, with whom they chaffer and traffick only for a certaine precious stone or gem, which we call a Carbuncle, brought out of Æthyopia. There comes betweene, the countrie Phazania, lying toward the wilderneese aboue said of Affrick, aboue the lesse Syrtis: where we subdued the nation of the Phazanij, together with the cities

ties Alele and Cillaba. In like manner Dydamum ouer-against Sabrata. Next to whom there is a mountain, reaching a great way from the East into the West, called by our men Ater, naturally as it were burnt, & like as if it were scorched, and set on fire with the reflection of the Sun. Beyond that mountain are the desarts: also Matelgæ a town of the Garamants, & likewise Debris, which casteth forth a spring of waters seething vp from noon to midnight exceeding-hot: and for as many houres again into midday most chilling cold; also the most goodly towne Garama, the chiefe head of the Garamantes. All which places the Romanes haue conquered by force of armes, and ouer them *Cornelius Balbus* triumphed, the onely man of forreiners that was honoured with the triumphant chariot, and endowed besides with the freedome of Romane citizens. For why, being borne at Gades, he and his vncle both, *Balbus* the elder, were made free denizons of Rome. And this is maruell that our writers haue recorded, that besides the townes aboue named by him conquered, himselfe in his triumph caried the titles and pourtraictes not of Cydamus and Garama only, but also of all other nations and cities, which were ranged in a Roll, and went in this order, The towne Tabidium, the nation Niteris, the towne Negligemela, the Nation Bubeium, the town Vel, the nation Enipi, the town Thuben, the hill named Niger. The towns Nitibrum and Rapsa, the nation Difcera, the town Debris, the riuer Nathabur, the towne Tapsagum, the nation Nannagi, the towne Boin, the towne Pege, the riuer Dasibari. And again forward, these townes lying one to another together, Baracum, Buluba, Alasi, Balsa, Galla, Maxala, and Zizama. The hill Gyri, wherein *Titus* hath reported that precious stones were engendred. Hitherto the way to the Garamants, was intricat and vnpassable, by reason of the robbers and theeues of that countrey, who vsed to dig certain pits in the way (which to them that know the quarters of the counttey, is no hard matter to doe) and then couer them lightly ouer with sand. But in the last war which the Romans maintained against the Oenses, vnder the conduct and fortunate auspices of *Vespasian* the Emperor, there was found a short and neere way of foure daies iourney; & this way is called *Prætor caput Saxi* (besides the rocks head) The frontier towne of Cyrenaica is called Catabathmos, which is a towne and a vaile all on a sudden falling with a steepe descent. To this bound, from the lesse Syrtis, Cyrenaica Africa lieth in length 1060 miles, and in bredth, for so much as is knowne, 800.

Chap. VI.

¶ *Lybya Maraotis.*

THe countrey following is named Mareotis Libya, and boundeth vpon Ægypt, inhabited by the Marmaridæ, Adyrmachidæ, and so forward with the Mareotæ. The measure of it from Catabathmos to Paretoninm, is 86 miles. In that tract there lyeth in the way betweene the village Apis, a place renowned for the religious rites of Ægypt. From it to Parætonium are 12 miles. From thence to Alexandria 200 miles: the bredth thereof is 169 miles. *Eratosthenes* hath deliuered in writing, that from Cyrenæ to Alexandria by land is 525 miles. *Agrippa* saith, that the length of all Africk from the Atlanticke sea, together with the inferiour parr of Ægypt containeth 3040 miles. *Polybius* and *Eratosthenes*, reputed to haue bin most exact and curious in this kinde, set downe, from the Ocean to great Carthage 1600 miles. From thence to Canopicum the neerest mouth of Nilus, they make 1630 miles. *Isidore* reckoneth from Tingi to Canopus 3599 miles. And *Artemidorus* forty lesse than *Isodorus*.

Chap. VII.

¶ *Islands about Africke, and ouer against Africke.*

THese seas haue not very many Islands within them. The faireſt of them all is Meninx, 35 miles long, and 25 broad, called by *Eratosthenes* Lotophagitis. Two towns it hath, Meninx on Africke side, and Thoar on the other: it selfe is scituate from the right hand promontorie of the lesse Syrtis *200 paces. A hundred miles from it against the left hand is Cercina, with a free towne of the same name, in length it is 25 miles, and halfe as much in bredth where it is most; but toward the end not aboue fiue miles ouer. To it there lieth a pretty little one toward Carthage called Cercinitis, & ioineth by a bridge vnto it: from these almost 50 miles, lies Lopadusa six miles long. Then, Gaulos and Galata: the earth whereof killeth the Scorpion, a fell

*Or 1500 paces, i. a mile and a half.

crea-

creature,and noiſome to Africke. Men ſay alſo that they wil die in Clupea,ouer againſt which lieth Corſyra,with a towne. But againſt the gulfe of Carthage be the two Æginori,rocks more like than Iſlands,lying moſt between Sicily and Sardinia. There be that write how theſe ſometime were inhabited,but afterwards ſunke downe and were couered.

Chap. VIII.

¶ *The Æthyopians.*

BVt within the inner compaſſe and hollow of Africke toward the South, & aboue the Gætulians,where the deſarts come between,the firſt people that inhabit thoſe parts,be the Libij Ægyptij,and then the Leucæthiopes. Aboue them are the Æthyopian nations, to wit, the Nigritæ,of whom the riuer tooke name:the Gymetes,Pharuſi, and thoſe which now reach to the Ocean,whom we ſpake of in the marches of Mauritania, namely, the Peroſi. From all theſe,it is nothing but a wilderneſſe Eaſtward,till you come to the Garamantes,Augylæ, and Troglodites,according to the moſt true opinion of them,who place 2 Æthyopiaes aboue the deſarts of Africk;and eſpecially of *Homer*,who ſaith,that the Æthyopians are diuided 2 waies, namely,Eaſt and Weſt. The riuer Nyger is of the ſame nature that Nilus. It bringeth forth Reed and Papyr,breedeth the ſame liuing creatures,and riſeth or ſwelleth at the ſame ſeaſons. It ſpringeth betweene the Tareleia Æthyopians,and the Oecalicæ. The towne Mavin belonging to this people,ſome haue ſet vpon the wilderneſſe;as alſo,neere vnto them, the Atlantes, the Ægipanes,halfe wilde beaſts,the Blemmyi,the Gamphaſants,Satyres, & Himantopodes. Thoſe Atlantes if we will beleeue it,degenerate from the rites and manners of all other men. For neither call they one another by any name,and they look wiſtly vpon the Sun,riſing,& ſetting,with moſt dreadful curſes,as being pernicious to them & their fields; neither dream they in their ſleep as other men. The Troglodites dig hollow caues, and theſe ſerue them for dwelling houſes: they feed vpon the fleſh of ſerpents. They make a gnaſhing noiſe,rather than vtter any voice,ſo little vſe haue they of ſpeech one to another. The Garamants liue out of wedlock and conuerſe with their women in common. The Augylæ do no worſhip to any but to the diuels beneath. The Gamphaſantes bee all naked,and know no Wars , and ſort themſelues with no forrainer. The Blemmyi,by report haue no heads,but mouth and eies both in their breſt:the Satyres beſides their ſhape only,haue no properties nor faſhions of men. The Ægipanes are ſhaped,as you ſee them commonly painted. The Himantopodes be ſome of them limber legged and tender,who naturally go creeping on the ground. The Pharuſi,ſometime Perſæ,are ſaid to haue bin the companions of *Hercules*,as he went to the Heſperides. More of Africke worth the noting,I haue not to ſay.

Chap. IX.

¶ *Of Aſia.*

VNto it ioineth Aſia,which from the mouth of Canopus vnto the mouth of Pontus, after *Timoſthenes* 2639 miles. From the coaſt of Pontus to that of Mæotis,*Eratoſthenes* ſaith,is 1545 miles. The whole,together with Egypt vnto Tanais,by *Artemidorus* and *Iſidorus*,taketh 8800 miles Many ſeas there be in it,taking their names of the borderers; and therefore they ſhall be declared together with them. The next country to Africk inhabited,is Ægypt,lying farwithin-forth to the South,ſo far as the Æthyopians,who border vpon their backs. The nether part thereof the riuer Nilus,diuided on the right hand and the left, by his claſping doth bound and limit,with the mouth of Canopus from Africke,with the Peluſiake from Aſia, and carrieth a ſpace between of 170 miles. Whereupon,conſidering that Nilus doth ſo part it ſelf, ſome haue reckoned Ægypt among the Iſlands,ſo as it maketh a triangular figure of the land. And here it is that many haue called Ægypt by the name of the Greeke letter Delta, Δ . The meaſure of it from the channell where it is but one,and from whence it beginneth firſt to part into skirts and ſides,vnto the mouth of Canopus,is 146 miles;and to the Peluſiak 256: the vpmoſt part therof bounding on Æthyopia,is called Thebais. Diuided it is into townes hips with ſeueral iuriſdictions,which they cal Nomos;to wit,Ombites, Phatuites, Apollopolites, Hermonhites, Thinites,Phanturites,Caprites,Tentyrites,Dioſpalites,Antæopolites,Aphroditopolites,

lites,and Lycopolites. The country about Peluſium,theſe town-ſhips with their ſeueral iuriſdictions,Pharbœtites,Bubaſtites,Sethroites,& Tanites. The reſt haue theſe following,the Arabicke, the Hammoniacke which extendeth to the Oracle of *Iupiter Hammon*, Oxyrinchites, Leontopolites,Atarrabites,Cynopolytes,Hermopolites:Xoites, Mendeſins, Sebennites, Capaſtites,Latapolites,Heliopolites,Proſopites,Panopolites, Buſirites,Onuphites,Sorites,Ptenethu,Pthemphu,Naucratites,Nitrites,Gynæcopolites,Menelaites,in the country of Alexandria. In like manner of Libya Mareotis. Heracleopolites is in the Iſland of Nilus,fiftie miles long,wherein alſo is that which they call *Hercules* his town. Two Arſinoites there be they,and Memphites reach as farre as two the head of Delta. Vpon it there do bound out of Affrica the two Ouafitæ. There be that change ſome names of theſe,and ſet down for them other iuriſdictions,to wit,Heroopolites,and Crocodilopolites. Between Arſinoites and Memphites there was a lake 250 miles about,or as *Mutianus* ſaith,450, fifty paces deep,[*i.* 150 foot,]& the ſame made by mans hand,called the Lake Mæridis, of a king who made it. 72 miles from thence is Memphis,the caſtle in old time of the Ægyptian kings. From which to the Oracle of *Hammon* is twelue daies iournie, & ſo to the diuiſion of Nilus,which is called Delta,fifteen miles. The riuer Nilus riſing from vnknowne ſprings,paſſeth thorow deſarts and hot burning countries: and going thus a mighty way in length,is known by fame onely,without armes,without wars, which haue diſcouered and found out all other lands. It hath his beginning,ſo far forth as *Iabo* was able to ſearch and find out,in a hil of the lower Mauritania,not far from the Ocean,where a lake preſently is ſeen to ſtand with water,which they call Nilides. In it are found theſe fiſhes called Alabetæ,Coracini,Siluri,and the Crocodile. Vpon this argument & preſumption Nilus is thought to ſpring from hence,for that the pourtract of this ſource is conſecrated by the ſaid prince at Cæſaria,in Iſeum,and is there at this day ſeene. Moreouer,obſerued it is,that as the Snow or rain do ſatisfie the countrie in Mauritania,ſo Nilus doth encreaſe. When it is run out of this lake,it ſcorneth to run through the ſandy and ouergrown places, and hides himſelf for certaine daies iourny. And then ſoone after out of a greater lake, it breaketh forth in the country of the Maſſæſyli,with Mauritania Cæſarienſes,and lookes about viewing mens company,carrying the ſame arguments ſtill of liuing creatures bred within it. Then once again being receiued within the ſands,it is hidden a ſecond time for twenty daies iourny,in the deſarts as farre as to the next Æthiopes:and ſo ſoone as hee hath once againe eſpied a man, forth hee ſtartes (as it ſhould ſeem) out of that ſpring,which they called Nigris. And then diuiding Affrick from Æthiopia, being acquainted, if not preſently with people,yet with the frequent company of wild and ſauage beaſts,and making ſhade of woods as he goes he cuts through the middeſt of the Æthiopians:there ſurnamed Aſtapus, which in the language of thoſe nations ſignifieth a water flowing out of darkeneſſe. Thus daſheth he vpon ſuch an infinite number of Iſlands,and ſome of them ſo mighty great,that albeit he bare a ſwift ſtreame,yet is he not able to paſſe beyond them in leſſe ſpace than 5 daies. About the goodlieſt and faireſt of them Meroe,the chanell going on the left hand is called Aſtabores, that is, the branch of a water coming forth of darkeneſſe:but that on the right hand Aſtuſapes,which is as much as, lying hid, to the former ſignification. And neuer taketh the name of Nilus, before his waters meet again & accord all whole together. And euen ſo was he aforetime named Siris,for many miles ſpace: and of *Homer* altogether Ægyptis:and of others, Triton: here and there,and euer and anon hitting vpon Iſlands,and ſtirred as it were with ſo many prouocations:and at the laſt encloſed and ſhut within mountaines, and in no place he caries a rougher and ſwifter ſtream,while the water that he beareth,haſtens to a place of the Æthiopians called Catadupi,where in the laſt fall among the rockes that ſtand in his way, he is ſuppoſed not to runne, but to ruſh downe with a mighty noiſe. But afterwards he becomes more milde and gentle, as the courſe of his ſtreame is broken,and his violence tamed and abated,yea,and partly wearied with his long way: and ſo though with many mouths of his,he diſchargeth himſelfe into the Ægyptian ſea. Howbeit at certaine ſet daies he ſwelleth to a great height:and when he hath trauelled all ouer Ægypt,hee ouerfloweth the land,to the great fertility and plenty thereof. Many and diuers cauſes of this riſing and increaſe of his, men haue giuen:but thoſe which carry the moſt probabilitie, are either the rebounding of the water,driuen back by the winds Eteſiæ,at that time blowing againſt it,and driuing the ſea withall vpon the mouths of Nilus:or elſe the Summer rain in Æthiopia by reaſon that the ſame Eteſiæ bring clouds thither from other parts of the world. *Timæus* the

Mathematician,alledged an hidden reason therof,to wit,that the head and source of Nilus is named Phyala,and the riuer it selfe is hidden,as it were drowned within certain secret trenches within the ground, breathing forth vapors out of reeking rockes,where it thus lieth in secret. But so soone as the sunne during those daies,commeth neere, drawne vp it is by force of heate, and so all the white he hangeth aloft,ouerfloweth:and then againe for feare he should be wholly deuoured and consumed,putteth in his head againe and lieth hid. And this happeneth from the rising of the dog starre Sicinus,in the Sunnes entrance into Leo,while the planet standeth plumbe ouer the fountaine aforesaid:for as much as in that climate there are no shadows to be seene. Many againe were of a different opinion,that a riuer floweth more abundantly,when the Sunne is departed toward the North pole,which happeneth in Cancer and Leo: and therefore at that time is not so easily dried:but when he is returned once againe back toward Capricorn and the South pole,it is drunke vp,and therefore floweth more sparely. But if according to *Timæus* a man would thinke it possible that the water should be drawne vp,the want of shadowes during those daies,and in those quarters,continueth still without end. For the riuer begins to rise and swell at the next change of the Moone after the Sun-steed,by little and little gently,so long as he passes through the signe Cancer,but most abundantly when he is in Leo. And when he is entred Virgo,he falleth and settleth low again,in the same measure as he rose before. And is cleane brought within his bankes in Libia,which is, as *Herodotus* thinketh,by the hundreth day. All the whiles it riseth,it hath been thought vnlawfull for kings or gouernours to saile or passe in any vessell vpon it,and they make conference so to do How high it riseth,is known by markes and measures taken of certaine pits. The ordinary height of it is sixteen cubits. Vnder that gage the waters ouerflow not all. Aboue that stint there are a let and hinderance, by reason that the later it is ere they be fallen,and downe again. By these,the seed time is much of it spent,for that the earth is too wet. By the other there is none at all,by reason that the ground is dry and thirsty. The prouince taketh good keep and reckoning of both,the one as well as the other;For when it is no higher than 12 cubits,it findeth extream famine:yea, and at 13 it feeleth hunger still,14 cubits comforts their hearts, 15 bids them take no care, but 16 affoordeth them plenty and delicious dainties. The greatest floud that euer was knowne vntill thise daies was 18 cubits,in the time of Prince *Claudius* Emperor:and the least,in the Pharsalian warre, against the death of *Pompey*: as if the very riuer by that prodigious token lothed to see the same. When at any time the waters seeme to stand and couer the ground still,they are let out at certaine sluces,or floud-gates drawne vp and set open. And so soon as any part of the land is freed from the water,straight waies it is sowed. This is the only riuer of all others that breatheth out no wind from it. The Seignory & dominion of Ægypt beginneth at Syene, the frontier towne of Æthiopia. For that is the name of a demy Island 100 miles in compasse, wherein are the Ceraste vpon the side of Arabia:and ouer against it the 4 Islands Philæ, 600 miles from the partition of Nilus,where it began to be called Delta,as wee haue said. This space of ground hath *Artemidorus* deliuered,and withall, that within it were 250 townes. *Iuba* feteth down 400 miles. *Aristocreon* saith,that from Elephantis to the sea is 750 miles. This Elephantis being an Island,is inhabited beneath the lowest cataract or fal of water 3 miles,and aboue Syene 16:and it is the vtmost point that the Ægyptians saile vnto,& is from Alexandria 586 miles. See how far the Authors aboue written, haue erred and gone out of the way: there meet the Æthiopian ships,for they are made to fold vp together, and carry them vpon their shoulders, so often as they come to those cataracts or downefals afore-said. Ægypt ouer and aboue all other their boast and glory of antiquitie,brags that in the raigne of king *Amasis*,there were inhabited in it and peopled twenty thousand cities. And euen at this day full it is of them,such as they be,and of base account. Howbeit, that of *Apollo* is much renowmed, as also neere vnto it another of Leucathea,and* Diospolis the great,the very same that Thebes,famous for the 100 gates in it. Also, Captos, a great mart towne next to Nilus, much frequented for merchandise and commodities out of India and Arabia. Moreouer the towne of *Venus*,and another of *Iupiter*,& Tentyris,beneath which standeth Abydus, the royall seate of *Memnon*, and Osiris renowmed for the temple there, seuen miles and an halfe distant from the riuer,toward Lybia. Then Ptolemais,Panopolis,and another yet of *Venus*. Also in the Lybian coast, Lycon,where the hils doe bound Thebais. Soone after,these townes of *Mercurie*,Alabaston, Canum, and that of *Hercules* spoken of before. After these, Arsinoe, and the aboue-said Memphis, betweene which and

* i. Thebes in Iupiters

and the diocesse Arsinoetis,in the Lybian coast, the towers called Pyramides, the Labyrinth built vp in the lake of Mœris without any iot of timber to it,and the town Crialon. One more besides, standing within-forth and bounding vpon Arabia, called the towne of the Sunne, of great account and importance.

Chap. X.

¶ *Alexandria.*

BVt right worthy of praise is Alexandria,standing vpon the coast of the Egyptian sea, built by *Alexander* the Great on Africke side,12 miles from the mouth of Canopus, neere to the lake Marcotis;which was before-time called * Arapotes. *Danochares* the Architect (a man renowned for his singular wit many waies!) aid the modell and platforme therof by a subtil and witty deuise;for hauing taken vp a circuit of 15 miles for the city,he made it round like to a Macedonian cloke,ful in the skirts,bearing out into angles and corners,as wel on the right hand as the left,so as it seemed to lie in folds and plaits;and yet euen then he set out one fifth part of all this plot for the kings palace. The lake Marcotis from the South side,meeteth with an arme of the riuer Nilus,brought from out of the mouth of the said riuer called Canopicus: for the more commodious trafficke and commerce out of the firme ground and inland Continent. This lake containeth within it sundry Islands,and (according to *Claudius Cæsar*) it is thirty miles ouer. Others say,that it lieth in length 40 Schœni,and so, whereas euery Schœne is 30 stadia,it commeth by that account to be 150 miles long,and as many broad. Ouer and besides, there be many goodly faire towns of great importance, standing vpon the riuer Nilus where he runneth,and those especially which haue giuen name to the mouthes of the riuer,and yet not to all those neither(for there be 11 of them in all,ouer and besides foure more, which they themselues call bastard mouthes) but to 7 of the principall:to wit,vpon that of Canopus, next vnto Alexandria; then Bolbitinum, and so foorth to Sebenniticum, Phatuiticum, Mendesicum, Taniticum,and last of all Pelusiacum. Other cities there be besides,to wit, Buros, Pharbœtos, Leontopolis,Achribris,Isis towne,Busiris, Cynophis, Aphrodites, Sais, Naucratis, of which some thinke the mouth Naucraticum tooke the name,which they be that cal Heracleoticum, preferring it before Canopicum,next vnto which it standeth.

* Rachobeis

Chap. XI.

¶ *Arabia* [*the Desart or Petræa.*]

BEing once past that arme of the riuer Nilus, which entereth into the sea at Pelusium, you come into Arabia,confining vpon the red sea;and that other Arabia,so rich & odoriferous, and therefore renowned with the syrname of Happie. As for this desart Arabia, possessed it is by the Catabanes, Esbonites,and Screnite Arabians:all barren and fruitlesse,saue whereas it meeteth with the confines of Syria,and setting aside the mountaine Casius, nothing memorable. This region confronteth the Arabians Canchlei on the East-side,and the Cedræi Southward,and they both confine together afterwards vpon the Nabathæes. Moreouer,2 Baies there bee, the one called the gulfe of Heroopolis,and the other of Elani;both in the red sea on the coast of Egypt,150 miles distant,betweene two townes,Elana,and Gaza, which is in our (Mediteranean) sea. *Agrippa* counteth from Pelusium to Arsinoe,a towne seituate vpon the red sea, an hundred and fiue and twenty miles. See how small a way lyeth betweene two Climates so different in Nature.

Chap. XII.

¶ *Syria,Palestine,Phœnice.*

VPon the coast of the said Arabia,confineth Syria;a Region in times past, the chiefe and most renowned vpon earth;and the same distingui shed by sundry names. For where it confineth vpon the Arabians,called it was Palestina, Iurie, Cœle Syria, and afterward, Phœnice. But go farther within the firme land, Damascene. Turne more still Southwards, it is named Babylonia. And the same,between the riuers Euphrates and Tygris, carrieth the name

of Mesopotamia. Beyond the mountaine Taurus, it is Sophene; but on this side the hill, they call Comagene. The countrey beyond Armenia, is Adiabenæ, named before-time Assyria: but the marches of Syria, which confront Cilicia, is knowne by the name of Antiochia. The whole length of Syria, from the frontiers of Cilicia to Arabia, containeth 470 miles: the bredth between Seleucia Pieria, to Zeugina, a towne seated vpon Euphrates, taketh 175 miles. They that make a more subtill and particular diuision, would haue Phœnice to be enuironed with Syria. And first, as you come from Arabia, is the sea-coast of Syria, which compriseth in it Idumæa & Iudæa, then you enter into Phœnicia, and so into Syria again, when you are past Phœnicia. And within-forth farther into the country, Phœnice is inclosed with Syria Damascena. All that sea yet, which beateth vpon that coast, beareth the name of the Phœnician sea. As for the nation it selfe of the Phœnicians, haue been highly reputed for their Science and learning, and namely, for the first inuention of letters, for their knowledge in Astrologie, nauigation, and martial skill. Being past Pelusium, you come to a city called Chabriæ Castra to the mountain Casius, and the temple of *Iupiter Casius*: also the tombe of *Pompeius Magnus*; and last of all to the city Ostracium. To conclude, from Pelusium to the frontiers of Arabia the Desart [alongst the coast of Syria] are 65 miles.

Chap. XIII.

¶ *Idumæa, Syria, Palestina, Samaria.*

Soon after beginneth Idumæa & Palestina, euen from the rising vp of the lake Sirbon, which some haue reported to carry a circuit of 150 miles. *Herodotus* saith, it is hard vnder the foot of the hill Casius: but at this day it is but a small lake. As for the towns there, they be Rhinocolura, and more within the land, Raphæa: also Gaza a port towne, and farther within, Anthedon, and the mountain Angoris. From thence you descend to the coast of Samaria, the free citie Ascalon, and Azotus; the two Iamnes, whereof the one is well within the land; and so forward to Ioppe, a towne in Phœnicia, which by report, is more antient than the deluge. Scituate it is vpon an hill, with a rocke before it, wherein are to be seen the tokens and reliques of Lady *Andromedaes* prison where she was bound. Within a chappell there, the Siren *Decreto*, whereof the Poets tell such tales, is worshipped. Being past Ioppe, you meet with Apollonia: the towne of Strato, called also Cæsarea, founded by K. *Herod:* it beareth now the name of Prima Flauia, a colony there planted and endowed with priuiledges by *Vespasian* the Emperor. The bounds of Palestina be 180 miles from the confines of Arabia: and there entreth Phœnice. Within-forth in the countrey, are the townes of Samaria, and Neapolis, which before-time was named Mamortha (or Maxbota.) Also Sabaste vpon the mountain; and Gamala, which yet standeth higher than it.

Chap. XIIII.

¶ *Iurie and Galilæa.*

Aboue Idumæa and Samaria, Iudæa spreadeth out far in length and breadth. That part of it which ioineth to Syria, is called Galilæ: but that which is next to Syria and Egypt, is named Peræa, [*i.* beyond Iordan.] Full of rough mountaines disperſed here and there: and feuered it is from other parts of Iury, by the riuer Iordan. As for the rest of Iudæa, it is diuided into ten gouernments or territories, called Toparchies, in this order following: to wit, that of Hierichò, a vaile richly planted with Date trees: Emmaus, well watered with fountaines: Lydda, Ioppica, Accrabatena, Gophnitica, Thamnitica, Betholene, Tephenæ, and Orine, wherein stood Ierusalem, the goodliest citie of all the East parts, and not of Iury onely. In it also is the principalitie Herodium, with a famous towne of that name.

Chap. XV.

¶ *Iordane the Riuer.*

The riuer Iordan springeth from the fountaine Paneades, which gaue the Syrname to the citie Cæsarea, whereof we will speake more. A pleasant riuer it is, and as the site of the countrey will permit and giue leaue, winding and turning in and out, seeking as it were for loue

A loue and fauour, and applying it selfe to please the neighbor inhabitants. Full against his will, as it were, he passeth to the lake of Sodom, Asphaltites, that ill-fauored and cursed lake: and in the end falleth into it, and is swallowed vp of it, where amongst those pestilent and deadly waters, he loseth his owne that are so good and wholesome. And therefore to keep himselfe out of it as long as he possibly could, vpon the first opportunity of any vallies, hee maketh a lake, which many call Genesara, which is 16 miles long, and 6 broad. The same lake is enuironed with diuers faire and beautifull townes; to wit, on the East side, with Iulias and Hippo; on the South, with Tarichea, of which name, the lake by some is called Tarichion; and on the West, with Tiberias, an healthfull place for the baines there of hot waters.

B

Chap. XVI.

¶ *Asphaltites.*

Asphaltites, or the lake of Sodom, breedeth and bringeth forth nothing but Bitumen; and thereupon it tooke the name. No liuing body of any creature doth it receiue into it: buls and camels swim and flote aloft vpon it. And hereupon ariseth that opinion which goeth of it, That nothing there wil go downe and sink to the bottome. This lake in length exceedeth 100 miles, 25 miles ouer it is at the broadest place, and six at the narrowest. On the East, the Arabian Nomades confront it; and on the South side, Machærus regardeth it: in time past, the second fortresse of Iudæa, and principall next to Ierusalem. On the same coast, there is a fountain of hot waters, wholesome and medicinable, named Callirhoe, and good against many diseases.

C The very name that it carrieth, importeth no lesse praise and commendation.

Chap. XVII.

¶ *The people Esseni.*

Along the West coast inhabit the Esseni. A nation this is, liuing alone and solitarie, and of all others throughout the world most admirable and wonderfull. Women they see none: carnal lust they know not; they handle no mony; they lead their life by themselues, and keepe company onely with Date trees. Yet neuertheless, the countrey is euermore well peopled, for that daily numbers of strangers resort thither in great frequencie from other parts: and namely, such as be weary of this miserable life, are by the surging waues of frowning fortune driuen hither, to sort with them in their manner of liuing. Thus for many thousand yeares [a thing incredible, and yet most true] a people hath continued without any supply of new breed and generation. So mightily increase they euermore, by the wearisome estate & repentance of other men. Beneath them stood sometime Engadda, for fertilitie of soile and plenty of Date-tree groues, accounted the next city in all Iudæa, to Ierusalem. Now, they say, it serueth for a place only to inter their dead: beyond it, there is a castle or fortresse scituat on a rock, and the same not far from the lake of Sodom Asphaltites. And thus much as touching Iudæa.

D

Chap. XVIII.

E ¶ *Decapolis.* [i. *Cœle-Syria.*]

There ioyneth to it on Syria side, the region Decapolis, so called of the number of townes and cities in it. Wherein, all men obserue not the same, nor make like account: howbeit most men speake of Damascus and Opotos, watered with the riuer Chrysorrhora. Also, Philadelphia, renowned for the fruitfull territory about it. Moreouer, of Scythopolis, taking name of the Scythians there planted: and before-time Mysa, so named of Prince or Father *Bacchus*, by reason that his nource there was buried. Also Gadara, scituate on the riuer Hieromiax, running euen before it. Besides, the aboue-named Hippos Dios. Likewise Pella, enriched with the good fountains: and last of all, Galaza and Canatha. There lie betweene and about these F cities, certaine Royalties called Triarchies, containing euery one of them as much as an whole countrey: and reduced they be as it were into seuerall countries; namely, Trachonitis Panias, wherein standeth Cæsarea, with the fountain aboue-said, Abila, Arca, Ampeloessa, and Gabe.

Chap. XIX.

¶ *Tyre and Sidon.*

REturne now we muſt to the ſea-coaſt of Phœnice. A riuer runneth there called Crocodilon, whereupon ſtood a towne in times paſt bearing the name. Alſo there remain in thoſe parts the bare reliques ſtill of cities, to wit, Dorum, Sycaminum, the cape or promontory Carmelum; and a towne vpon the hill ſo named; but in old time called Ecbatana. Neere therto Getta and Iebba; the riuer Pagida or Pelus, carrying chryſtall glaſſe with his ſands vpon the ſhore. This riuer commeth out of the meere Ceudeuia, from the foot of mount Carmel. Neere vnto it is the city Ptolemais, erected in forme of a colony, by *Claudius Cæſar*; in ancient time called Ace. The towne Ecdippa, and the cape Album. Then followes the noble citie Tyrus, in old time an Iſland, lying almoſt 3 quarters of a mile within the deepe ſea: but now, by the great trauell and deuiſes wrought by *Alexander* the Great at the ſiege thereof, ioyned to the firme ground: renowmed, for that out of it haue beene three other cities of ancient name, to wit, Leptis, Vtica, and that great Carthage, which ſo long ſtroue with the Empire of Rome for the monarchy and dominion of al the whole world: yea, and Gades, diuided as it were from the reſt of the earth, were peopled from hence. But now at this day all the reputation and glory thereof, ſtands vpon the die of purple & crimſon colors. The compaſſe of it is 19 miles, ſo ye compriſe Palætyrus within it. The very towne it ſelfe alone, taketh vp 22 ſtadia. Neere vnto it are theſe townes, Luhydra, Sarepta, and Ornython: alſo Sydon, where the faire and cleer glaſſes be made, and which is the mother of the great citie Thebes in Bœotia.

Chap. XX.

¶ *The mount Libanon.*

BEhind it, beginneth the mount Libanus, and for 1500 ſtadia reacheth as farre as to Smyrna, whereas Cœle-Syria takes the name. Another promontory there is as big ouer-againſt it, called Antilibanus, with a vallie lying betweene, which in old time ioyned to the other Libanus with a wall. Being paſt this hill, the region Decapolis ſheweth it ſelfe to you within-forth, called Decapolis; and the aboue-named Tetrachies or Realmes with it, and the whole largeneſſe that Paleſtine hath. But in that coaſt and tract ſtill along the foot of the mount Libanus, there is the riuer Magoras: alſo the colonie Berytus, called Fœlix Iulia. The towne Leontos; the riuer Lycos: alſo Palæbyblos, [*i.* Byblos the old.] Then ye come vpon the riuer Adonis, and ſo to theſe townes, Byblos [the new,] Botrys, Gigarta, Trieris, Calamos, and Tripolis, vnder the Tyrians, Sydonians, and Aradians. Then meet you with Orthoſia, and the riuer Eleutheros. Alſo theſe townes, Simyra, Marathos; and ouer-againſt, Aradus, a towne of ſeuen ſtadia: and an Iſland leſſe than a quarter of a mile from the Continent. When you are once paſt the countrie, where the ſaid mountaines doe end, and the plaines lying betweene, then beginneth the mount Bargylis: and there, as Phœnice endeth, ſo begins Syria againe. In which countrie are Carne, Balanea, Paltos, and Gabale: alſo the Promontorie, whereupon ſtandeth the free city Laodicea, together with Dioſpolis, Heraclea, Charadrus, and Poſidium.

Chap. XXI.

¶ *Syria, Antiochena.*

GO forward in this tract, and you ſhall come to the cape of Syria Atiochena: within-forth is ſeated the noble and free citie it ſelfe Antiochena, ſurnamed Epidaphne: through the mids whereof runneth the riuer Orontes. But vpon the very cape, is the free citie Seleucia, named alſo Pieria.

Chap. XXII.

¶ *The mount Caſius.*

ABoue the citie Seleucia, there is another mountaine named Caſius, as well as that other, which confronteth Arabia. This hill is of that heigth, that if a man be vpon the top of it in the darke night ſeaſon, at the reliefe of the fourth watch, he may behold the Sunne ariſing

ſing. So that with a little turning of his face and body, hee may at one time ſee both day and night. To get vp by the ordinary high-way to the very pitch of it, a man might fetch a compas of 19 miles; but climbe directly vpright it is but 4 miles. In the borders of this country runs the riuer Orontes, which ariſeth between Libanus and Antilibanus, neere to Heliopolis. Then the towne Rhoſos appeares: and behind it, the ſtreight paſſages and gullets betwixt the mountaines Rhotij and Taurus, which are called Portæ Syriæ. In this tract or coaſt ſtands the town Myriandros, the hill Avanus (where is the towne Bomilæ, which ſeparateth Cilicia from the Syrians.

Chap. XXIII.

¶ *Cœle-Syria, [or high Syria.]*

IT remaineth now to ſpeake of the townes and cities in the midland parts within the firme land: and to begin with Cœle Syria, it hath in it Apamia, ſeparated from the Nazerines tetrarchy by the riuer Marſia: likewiſe Bambyce, otherwiſe called Hierapolis; but of the Syrians, Magog. There is honored the monſtrous idoll of the Meermaid, Atargatis, called of the Greeks Decreto. Alſo Chalcis, with this addition, Vpon Belus: from which the region Chalcidene, moſt fertile of all Syria, taketh name. Then haue you the quarter Cyrrhiſtica, with Cirrhus, Gazatæ, Gindarenes, and Gabenes. Moreouer, two Tetrarchies, called Granucomataæ. Moreouer, the Hemiſenes, Hylates, the Ituræans country (and principally thoſe of them who are named Betarrani) and the Mariammitanes. The Tetrarchie or Principalitie named Mammiſea, the city Paradiſus, Pagræ, Pinarites, and two Seleuciæ, beſides the aboue named, one called, Vpon Euphrates; and the other, Vpon Belus: and laſt of all, the Carditenſes. The reſt of Syria hath theſe States (beſides thoſe which ſhall be ſpoken of with the riuer Euphrates) the Arethuſians, Berænenſes, and Epiphanenſes: and Eaſtward, the Laodicenes, namely thoſe who are entituled, Vpon Libanus: the Leucadians and Lariſſæans: beſides 17 Tetrarchies reduced into the forme of realmes, but their names are barbarous.

Chap. XXIV.

¶ *Euphrates.*

AND here me-thinks is the fitteſt and meeteſt place to ſpeake of Euphrates. The ſource of it, by report of them that ſaw it laſt and neereſt, is in Caranitis, a ſtate vnder the gouernment of Armenia the greater: and thoſe are *Domitius* and *Corbulo*, who ſay, that it ſpringeth in the mountaine Aba. But *Licinius Mutianus* affirmeth, that it iſſueth from vnder the foot of the mountaine which they call Capotes, 12 miles higher into the countrey than is Simyra: and that in the beginning it was called Pyxirates. It runs firſt directly to Derxene, and ſo forth to Ana alſo, excluding the regions Armeniæ, the greater as wel as the leſſe, from Cappadocia. The Daſtuſæ from Simyra are 75 miles: from thence it is nauigable to Pæſtona, 50 miles: from it to Melitene in Cappadocia, 74 miles. So forward to Elegia in Armenia, ten miles; where he receiueth theſe riuers, Lycus, Arſania, and Arſanus. Neere to Elegia he meeteth afront with the hil Taurus: yet ſtayeth he not there, but preuaileth a pierceth thorow it, although it beare a bredth there of 12 miles. At this entry where he breaketh thorow the hill they cal him Omiras, and ſo ſoon as he hath made way and cut thorow it he is named Euphrates. Being paſt this mountaine, he is full of rocks and very violent: howbeit he paſſeth through the country of the Mœri, where he carieth a ſtream of 3 Schœnes bredth, where he parts Arabia on the left hand, from Comagene on the right. And neuertheleſſe, euen there wheras he conquereth and getteth the vpper hand of Taurus, he can abide a bridge to be made ouer him. At Claudiopolis in Cappadocia he courſeth Weſtward: and now the mountain Taurus, though reſiſted and ouercome at firſt, impeacheth and hindereth him of his way, and notwithſtanding (I ſay) he was ouermatched and diſmembred one piece from another, he gets the better of him another way, breaking his courſe now, and driuing him perforce into the South. Thus Nature ſeems to match the forces of theſe two champions equally in this maner, That as Euphrates goes on ſtil without ſtay as far as he will, ſo Taurus will not ſuffer him yet to run what way he wil. Now when theſe Cataracts and downfalls of the riuer are once paſt, it is nauigable againe, and forty miles from that

place

place ſtandeth Samoſata the head city of Comagena. Now hath Arabia beſide the townes a- G
foreſaid, Edeſſa, ſomtime called Antiochea, Callirrhoe, taking name of the fountain: and Car-
ræ, ſo famous and renowned for the defeature there of *Craſſus* and his army. Hereunto ioineth
the gouernment and territorie of Meſopotamia, which alſo taketh the firſt beginning from the
Aſſyrians, in which ſtand the townes Anthemuſa and Nicephorium. Hauing paſſed this coun-
trey, ye ſtraitway enter vpon the Arabians called Rhetavi, whoſe capitall city is Singara. Now
to returne to Samoſatæ, from it in the coaſt of Syria, the riuer Marſyas runneth into Euphra-
tes. As Gingla limiteth Comagene, ſo the land of the Meri beginneth there. The towns Epi-
phania and Antiochia haue the riuer running cloſe to them, and hereupon they haue this addi-
tion in their names, Standing vpon Euphrates. Zenyma likewiſe, 72 miles from the Samoſa-
tæ, is innobled for the paſſage ouer Euphrates: for ioined it is to Apamia, right againſt, by a H
bridge, which *Seleucus* the founder of both cauſed to be made. The people that ioine hard to
Meſopotamia be called Rhoali. As for the townes of Syria which be vpon this riuer, are Euro-
pum, Thapſicum in times paſt, at this preſent Amphipolis; and laſt of all the Arabian Scæni-
tæ. Thus paſſeth Euphrates, as far as to the land Vra, where turning his courſe to the Eaſt, hee
leaueth behinde him the Deſarts of Palmyra in Syria, which reach to the city Petra, and to the
country of Arabia Fœlix.

Chap. XXV.

¶ *Palmyra.*

THe noble city Palmyra is paſſing well ſeated, as well for the riches of the ſoile, as for a- I
boundance of waters, which imbelliſh and ſet out the country on euery ſide. As rich and
long as it is, the territory all about is inuironed and incloſed with bars of ſand. And as if
Nature had a deſire to exempt it from all other lands to liue apart in peace, ſhee hath ſet it iuſt
in the middeſt and confines, between two puiſſant and mighty empires, to wit, the Romans and
Parthians: for there is not ſo ſoone any war proclaimed between thoſe two States and Monar-
chies, but at firſt they haue on both ſides a regard of it as a neutre. It is from Seleucia of the
Parthians, namely that vpon Tigris, 537 miles: and from the next port or coaſt of Syria, 252:
and from Damaſco 27 neerer. K

Chap. XXVI.

¶ *Hierapolis.*

BEneath the deſarts and wilderneſſe of Palmyra lieth the countrey Stelendena, wherein are
the cities named at this day Hierapolis, Bercœa, and Chaleis. Beyond Palmyra alſo, He-
meſa taketh vp ſome part of thoſe ſaid deſarts: and likewiſe Elutium, neerer to Petra by
one halfe than is Damaſcus. And next to Aſura ſtandeth Phiſiſcum, a towne of the Parthians
vpon Euphrates: from which by water it is a iourney of ten daies to Seleucia, and from thence
as many likewiſe to Babylon: for Euphrates, 83 miles from Zeugma, about the village Maſſi-
cæ, diuideth it ſelfe into two armes. On the left ſide he paſſeth into Meſopotamia, euen thorow
Seleucia, and about it entreth into the riuer Tygris, which runneth hard by: but on the right L
hand he carieth a current in his chanell toward Babylon, the chiefe city ſomtime of Chaldæa,
and paſſing through the midſt thereof, as alſo of another called Otris, he parts aſunder into ſun-
dry lakes and meeres. And there an end of Euphrates. He riſeth and falleth at certain times af-
ter the order of Nilus: yet ſome little difference there is betweene them in the manner, for he
ouerfloweth Meſopotamia when the Sun is in the 20 degree of Cancer, and begins againe to
diminiſh and ſlake when the Sun is paſt Leo, and newly entred into Virgo: ſo as in the 29 de-
gree of Virgo he is downe again, and come to his ordinary courſe.

Chap. XXVII.

¶ *Cilicia, and the nations adioyning, to wit, Iſauricæ, Homonades, Piſidia, Lycaonia, Pamphylia, the mountaine Taurus, and Lycia.*

BVt time it is to returne now to the coaſts of Syria, and to Cilicia that confronts it. Where
in the firſt place we meet with the riuer Diaphanes, the mountain Crocodilus, the ſtreights and

A and paſſages of the mount Amanus: more riuers alſo, to wit, Andricon, Pinarus, and Lycus, as
alſo the gulfe Iſſicus. The towne Iſſa ſtandeth vpon it, then come we to Alexandria to the Ri-
uer Chlorus, the free towne Æge, the riuer Pyramus, and the ſtreights in the entrance to Cili-
cia. Beyond them we encounter the townes Mallos & Magarſos: as for Tarſos it is more with-
in the countrey. From this towne we enter vpon the plaines of Aleij, and ſo forward to theſe
townes, Caſſipolis, and Mopſum, which is free, and ſtandeth vpon the riuer Pyramus; Thynos,
Zephyrium, and Anchialæ. On forward you ſhal haue the riuers Saros and Sydnus, which runs
through: Tarſus a free city far from the ſea: then are ye in the country Celeuderitis, together
with the capitall towne thereof. And anon ye ſhall ſet foot in a place called Nymphæum, and
B Solœ Cilicij now Pompeiopolis, Adana, Cibira, Pinara, Pedalie, Halix, Arſinoe, Tabæ, & Do-
ron: and neere the ſea ſide you ſhall finde a towne, an harbour, and a caue, named all Corycos.
Soon after, the riuer Calycadnus. The cape Sarpedon, the townes Olme and Mylæ, the Cape
and towne both of *Venus*, the very next harbor from whence men paſſe into the Iſle Cypres. But
in the maine land you ſhall finde theſe townes, Myanda, Anemurium, Coraceſium: and the ri-
uer Melas, the antient bound that limiteth Cilicia. Farther within-forth are to be ſpoken of,
the Anazarbenes, at this day Cæſar Auguſtani; Caſtabla, Epiphania, before-time Eniandos,
Eleuſa, and Iconium: Seleucia vpon the riuer Calicadmus, ſirnamed alſo Trachiotis, a city re-
moued backward from the ſea, where it was called Hormia. Furthermore, within the country,
the riuers Liparis, Bombos, and Paradiſus. Laſt of all, the mountaine Iubarus. All Coſmogra-
phers haue ioyned Pamphylia to Cilicia, and neuer regarded the Nation of Iſaurica, being a
C country by it ſelfe, hauing within it theſe towns, Iſaura, Clibanus, Lalaſſis. And it ſhoots down
to the ſea ſide, full vpon the frontiers of the country Anemurium aboue-ſaid. In like ſort, as
many as haue ſet forth maps and deſcriptions of the world, had no knowledge at all of the Na-
tion Homonades confining vpon it, notwithſtanding they haue a good towne within it, called
Homona. Indeed the other fortreſſes, *viz.* 44, lie hidden cloſe among the hollow vallies & hils
of that country. There inhabit the mountainers ouer their heads, the Piſidians, ſomtime called
Sobymi, whoſe chiefe colony is Cæſaria, the ſame that Antiochia. Their townes be Oroanda
and Sagaleſſos. This nation is incloſed as it were within Lycaonia, lying within the iuriſdicti-
on of the leſſe Aſia, and euen ſo together with it, the Philomelians, Timbrians, Leucolithi, Pel-
teni, and Hyrienſes reſort thither for law and iuſtice. There is a gouernment or Tetrarchy alſo,
D out of the quarter of Lycaonia, on that ſide that bordereth vpon Galatia; vnto which belong
14 States or cities, the chiefe whereof is called Iconium. As for the nations of Lyconia, thoſe
of any note be, Tembaſa vpon Taurus, Sinda in the confines of Galatia, and Cappadocia. But
on the ſide thereof aboue Pamphilia, ye meet with Mylia, diſcended in old time from Thrace,
who haue for their head city Ariganda. As for Pamphilia, it was in antient time called Mopſo-
pia. The Pamphylian ſea ioineth to the Cilician. The townes ſcituate vpon that coaſt, be Side,
Aſpendus on the hill, Plantaniſtus, and Perga. Alſo the cape Leucolla, the mount Sardemiſus,
the riuer Eurymedon, running hard by Aſpendum. Moreouer, Cataractes the riuer, neere vnto
which ſtand Lyrneſſus and Olbia; and the vtmoſt towne of all that coaſt Phaſelis. Faſt vpon
it lieth the Lycian ſea, and the nation of the Lycians, where the ſea makes a huge great gulfe.
E The mountaine Taurus likewiſe, confining vpon the Levant ſea, doth limit Lycia and Cilicia,
with the promontorie Chelidonium. This Taurus is a mighty mountain, and determineth as
a iudge an infinite number of nations. So ſoone as he is riſen from the coaſt of the Eaſt Indian
ſea hee parteth in twaine, and taking the right hand paſſeth Northward, and on the left hand
Southward, ſomwhat bending into the Weſt: yea, and diuiding Aſia through the middeſt, and
(but that he meeteth with the ſeas) ready to ſtop and dam vp the whole earth beſides. He reti-
reth back therefore, as being curbed, toward the North, fetching a great circuit, and ſo making
his way, as if Nature of purpoſe oppoſed the ſeas eſtſoones againſt him to bar him of his paſ-
ſage; of one ſide the Phœnician ſea, of another the great ſea of Pontus; the Caſpian & Hyrca-
nian ſeas likewiſe; and full againſt him the lake Mœotis. And notwithſtanding all theſe bars,
F within which he is pent, twined, and wreſted, yet maketh he means to haue the maſtery, and get
from them all: and ſo winding byas he paſſeth on, vntill he encounter the Riphæan hils, which
are of his owne kinde: and euer as he goeth is entituled with a number of new names. For he
is called Imaus where he firſt beginneth: a little forward, Emodus, Paropamiſus, Circius, Ca-
nibades, Parphariades, Choatras, Oreges, Oroandes, Niphates, and then Taurus. Neuertheleſſe
where

where he is higheſt, and as it were ouer-reacheth himſelfe, there they name him Caucaſus : G
where he ſtretcheth forth his armes like as if he would now and then be doing with the ſeas, he
changeth is name to Sarpedon, Coraceſius, and Cragus : and then once again he takes his for-
mer name Taurus, euen where he opens and makes paſſage as it were to let in the world. And
yet for all theſe waies and ouertures he claimeth his owne ſtil, and theſe paſſages are called by
the names of gates, in one place Armeniæ, in another Caſpiæ, and ſometimes Ciliciæ. Ouer
and beſides, when he is broken into parcels, and eſcaped far from the ſea, he taketh many names
from diuers and ſundry nations on euery ſide: for on the right hand he is termed Hyrcanus, and
Caſpius: on the left, Pariedrus, Moſchicus, Amazonicus, Coraxicus, and Scythicus : and gene-
rally throughout all Greece, Ceraunius.

To returne then to Lycia, being paſt the foreſaid cape there, Chelidonium, ye come to the H
towne Simena, the hill Chimæra, which caſteth flames of fire euery night, the city Hephæſti-
um, where the mountains about it likewiſe oftentimes are known to burne. Somtimes the city
Olympus ſtood there, but now nothing to be ſeene but mountaines, and amongſt them theſe
townes, Gagæ, Corydalla, and Rhodiopolis. On the ſea coaſt, the city Lymira vpon a riuer, to
which Aricandus runneth : alſo the mountaine Maſſyrites, the cities Andriara and Myra. Alſo
theſe townes, Apyrc, and Antiphellos, which ſomtime was called Habeſſus ; and more within-
forth in a corner, Phellus. Then come ye to Pyrrha, and ſo to Xanthus, 15 miles from the ſea,
and to a riuer likewiſe of that name. Soon after ye meet with Patara, before-time named Sata-
ros, and Sydinia ſeated vpon an hill, and ſo to the promontorie Ciagus. Beyond which ye ſhall
enter vpon a gulfe as big as the former, vpon which ſtandeth Pinara and Telmeſſus, the vtmoſt I
bound in the marches of Lycia. In antient time Lycia had in it 60 townes, but now not aboue
36. Of which the principall and of greateſt note, beſides the aboue named, be Canæ, Candiba,
where is the famous wood Oenium, Podalia, Choma, vpon the riuer Adeſa, Cyane, Aſcanda-
lis, Amelas, Noſcopium, Tlos, and Telanorus. As for the midland parts of the maine, you ſhall
finde Chabalia, with three townes thereto belonging, Oenonda, Balbura, and Bubon.

When you are beyond Telmeſſus you meet with the Aſiaticke ſea, otherwiſe called Carpa-
thium, and this coaſt is properly called Aſia. *Agrippa* hath diuided it in two parts, whereof the
one by his deſcription confronteth vpon Phrygia and Lycaonia Eaſtward : but on the Weſt
ſide it is limited with the Ægean ſea. Southward it bounds vpon Egypt, and in the North vp-
on Paphlagonia : the length thereof by his computation is 470 miles, the bredth 300. As for
the other he ſaith, That Eaſtward it confineth vpon Armenia the leſſe : Weſtward vpon Phry-
gia, Lycaonia, and Pamphylia : on the North it butteth vpon the prouince or realm of Pontus,
and on the South ſide is incloſed with the Pamphylian ſea. He addeth moreouer, that it con-
taineth 575 miles in length, and 325 in bredth. The next coaſt bordering thereupon is Caria :
and when you are paſt it, Ionia, and beyond that, Æolis. As for Caria it incloſeth Doris in the
mids, enuironing it round on euery ſide, as far as to the ſea. In it is the Cape Pedalium, alſo the
riuer Glaucus, charged with the riuer of Telmeſſus. The townes of any reſpect be Dædala and
Crya, peopled only with baniſhed perſons. Therein you finde the riuer Axoum, and the towne
Calydua.

Chap. XXVIII.

¶ *The riuer Indus.*

THe riuer Indus, ariſing from the mountaines of the Cybirates, receiueth into it 60 other
running riuers, maintained with ſprings, of other ſmall riuers and brookes fed with land
flouds, aboue 100. Vpon it ſtandeth the free towne Caunos, and a little off, Pyrnos. Soon
after ye meet with the port Creſſa, ouer againſt which is diſcouered the Iſland Rhodus, within
the kenning of twenty miles. Being paſt that hauen, you ſhall enter vpon the plaine Loryma,
vpon which are ſeated the townes Tyſanuſa, Tarydion, Larymna. Then meet you with the M
gulfe Thymnias, and the cape Aphrodiſias : and on the other ſide of it the towne Hyda, and a-
nother gulf Schœnus. Then followes the country Bubaſſus, wherein ſtood in antient time, the
towne Acanthus, otherwiſe called Dulopolis. Alſo vpon the cape there, the free city Gnidos,
Triopia, then Peguſa, called likewiſe Stadia. Beyond which you enter into the Countrey of
Doris,

A Doris. But before we paſſe farther, meet it were to ſpeake of thoſe cities and States which are
in the midland countrie, and which lie behind, and namely of one, named Cibiratica. The
towne it ſelfe is in Phrygia, and to it reſort for law and iuſtice 25 cities.

Chap. XXIX.

¶ *Laodicia, Apamia, Ionia, Epheſus.*

THe principall citie in thoſe quarters (of the Cibirites) is Laodicia. Seated it is vpon the
riuer Lycus: and yet there run hard to the ſides thereof two other riuers, Aſopus, and Ca-
per. This citie in times paſt was called Dioſpolis, & afterwards Rhoas. The other nations
B belonging to that iuriſdiction of the Cibirates, worth the naming, by the Hydrelites, Themi-
ſones, and Hierapolites. Another countie-court or towne of reſort there is, which taketh the
name of Synnada : and to it repaire for iuſtice, the Licaonians, Appians, Encarpenes, Dorylæi,
Midæi, Iulienſes, and other ſtates of no great reckoning, fifteene. A third Seignorie or Shire
there is that goes to Apamia, which in old time was called Celænæ, and afterwards Ciboron :
ſcituate it is at the foot of the hill Signia, enuironed with three riuers, Marſias, Obrima, and
Orga, falling all into the great riuer Mæander. As for the riuer Marſias (which a little from his
ſpring was hid vnder the ground, whereas *Marſyas* the muſitian ſtroue with *Apollo* in playing
vpon the flute) ſheweth himſelfe again in Aulocrene, for ſo is the vallie called, ten miles from
C Apamia, as men trauell the high way to Phrygia. Vnder this iuriſdiction, we ſhould do well to
name the Metropolites, Dionyſopolites, Euphorbenes, Acmoneſes, Peltenes, and Silbians.
There are beſides to the number of 60 ſmall towns of no account. But within the gulfe of Do-
ris there ſtand Leucopolis, Amaxites, Eleus, and Euthenæ. Moreouer, other townes of Caria,
Pitaium, Eutaniæ, and Halicarnaſſus. And to this citie were annexed, as ſubiect and homages
by *Alexander* the great, ſix other townes, namely, Theangela, Sibde, Medmoſſa, Euranium, Pe-
daſium, and Telmeſſum : which townes are inhabited betweene the two gulfes, Ceramicus, and
Iaſius. From thence yee come to Myndus, and where ſometime ſtood Palæmindus, Neapolis,
Nariandus, Carianda, the free citie Termera, Bergyla, and the town Iaſus which gaue the name
to the gulfe Iaſius. But Caria is moſt renowned & glorious for the places of name within it in
D the firme land : for therein are theſe cities, to wit, Mylaſa free, and Antiochia, now ſtanding
where ſometime were the townes, Seminethos, and Cranaos : and enuironed now it is about
with the riuers Mæander, and Moſſinus. In the ſame tract ſtood ſometime Mæandropolis alſo.
There is beſides, the citie Eumenia, vpon the riuer Cludrus : the riuer Glaucus: the towne Ly-
ſias and Orthaſia. The tract or marches of Berecinthus, Nyſa, Trallais, which alſo is named
Euanthia, Seleucia, and Antiochia; which is ſcituate vpon the riuer Eudone that runneth hard
by it, and Thebanis which paſſes quite through it. Some there be who report, that the dwarfes
called Pigmæi, ſometime there dwelt. In which region beſides, were theſe townes, Thydonos,
Pyrrha, Eurome, Heraclea, Amyzon, and the free citie Alabanda, whereof that ſhierewicke of
iuriſdiction tooke name. Alſo the free towne Stratonicea, Hynidos, Ceramus, Trœzene, and
E Phorontis. Yea there be nations farther remote, that reſort thither to pleade and haue iuſtice in
that court : namely, the Othroniens, Halydiens, or Hyppines, Xyſtianes, Hydiſſenſes, Apollo-
niates, Ttapezopolites, and of free condition the Aphrodiſians. Ouer and beſides theſe, there
are Coſſinus, & Harpaſa, ſcituate vpon the riuer Harpaſus, which alſo ran vnder Trallicon, when
ſuch a towne there was. As for the country of Lydia, watered it is in many places with the re-
courſe of Mæanders ſtreame, winding and turning in and out, as his manner is : and it reacheth
aboue Ionia : confining vpon Phrygia in the Eaſt, vpon Miſia in the North, and in the South
ſide encloſing all the countrie of Caria. This Lydia was ſometimes named Mœnia. The capi-
tall citie of this region, is Sardis, ſeated vpon the ſide of the mountaine Tmolus, called before-
time Timolus, a hill well planted with vineyards. Moreouer, renowmed is this country for the
F riuer Pactolus iſſuing forth of this mountaine; which riuer is called likewiſe Chryſorrhoa : as
alſo for the fountain Tarnes The city aboueſaid, was commonly by the Mœonias called Hyde,
famous for the meer or lake of Gyges. Al that iuriſdiction is at this day called Sardinia. Thi-
ther reſort beſides the aboue named, the Caduenes, deſcended from the Macedonians; the Lo-
renes, Philadelphenes, yea and the very Mœnians, ſuch as inhabite vpon the riuer Cogamus
at the foot of Tmolus; and the Tripolitanes who together with the Antoniopolites, dwel vpon
the

the riuer Mæander. Furthermore, the Apollonos-Hieritæ, Myfotmolites, and others of fmall reputation.

Ionia beginneth at the gulfe Iafius, and all the coaft thereof is very full of creekes and reaches. The firft gulfe or creeke therein is Bafilicus; and ouer it the cape Pofideum, and the town called fomtime, the Oracle of Branchidæ, but at this day, of Apollo Didymæus, 20 ftadia from the fea fide. Beyond which 180 ftadia, ftandeth Milletus, the head citie of Ionia, named in time paft Lelegeis, Pityufa, and Anactoria. From which, as from a mother citie, are defcended more than eighty others, all built along the fea coaft by the Millefians. Neither is this city to be defrauded of her due honour, for bringing forth that noble citizen *Cadmus*, who deuifed and taught firft to write in Profe. Concerning the riuer Mæander, it iffueth out of a lake at the foot of the mountain Aulocrene: and paffing vnder many townes, and filled ftill with as many riuers running into it, it fetcheth fuch windings to and fro, that oftentimes it is taken for to run back againe from whence it came. The firft countrie that it paffeth through, is Apamia: and from thence it proceedeth to Eumenitica, and fo forward through the plaines Bergylletici. Laft of all, hee commeth gently into Caria, and when hee hath watered and ouerflowed all that land with a moft fat and fruitful mud that he leaueth behind him, about ten ftadia from Miletus, he difchargeth himfelfe into the fea. Neer to that riuer, is the hill Latmus: the citie Heraclea, furnamed Caryca, of a hill of that name: alfo Myus, which as the report goeth, was the firft citie founded by the Ionians after their arriuall from Athens, Naulochum, and Pyrene. Alfo vpon the fea coaft, the towne called Trogilia, and the riuer Geffus. Moreouer, this quarter all the Ionians refort vnto in their deuotion, and therefore named it is Panionia. Neere vnto it was built a priueledged place for all fugitiues, as appeareth by the name Phygela: as alfo the town Marathefium ftood there fometime: and aboue it, the renowmed citie Magnefia, furnamed, Vpon Mæander; of the foundation of that other Magnefia in Theffalie. From Ephefus it is 15 miles; and from Trallais thither, it is three miles farther. Beforetime, called it was Theffaloce, & Androlitia: and being otherwife fituate vpon the ftrond, it tooke away with it other Iflands called Derafides, and ioine them to the firme land from out of the fea. More within the maine ftandeth Thyatira (in old time called Pelopia and Euhippa) vpon the riuer Lycus. But vpon the fea coaft, yee haue Manteium, and Ephefus, founded in times paft by the Amazones. But many names it had gone through before, for in time of the Troiane war, Alopes it was called: foone after, Ortygia, and Morges: yea, and it took name Smyrne, with addition of Trachæa, [*i.* rough] Samornium, and Ptelea. Mounted it is vpon the hill Pione, and hath the riuer Cayftrus vnder it, which commeth out of the Cilbian hills, and bringeth downe with it many other riuers, and principally is maintained and enriched with the lake Pegafeum, which difchargeth it felfe by reafon of the riuer Phyrites that runneth into it. With thefe riuers he bringeth downe a good quantitie of mud, whereby he increafeth the land: for now already a good way within the land, is the Iland Syrie, ioined to the continent. A fountain there is within the citie, called Callipia; and two riuers (height both Selinus) comming from diuers parts, enuiron the temple of *Diana*. After you haue been at Ephefus, you come to another Manteium, inhabited by the Colophonians: and within, the country Colophon it felfe, with the riuer Halefus vnder it. Then meet you with the noble temple of *Apollo Clarius*, and Lebedos. And in this quarter fomtime was to be feen the towne Notium. The promontory alfo Coryceon is in this coaft: and the mountaine Mimas, which reaches out 250 miles, and endeth at length in the plaines within the continent that ioyne vnto it. This is the place, wherein *Alexander* the Great commanded a trench feuen miles long and an halfe to be cut through the plain, for to ioyne two gulfes in one, and to bring Erythree and Mimas together for to be enuironed round therewith. Neere this city Erythree were fometimes the townes, Pœleon, Helos, and Dorion: now, there is the riuer Aleon, and the cape Corineum: vpon the mount Mimas, Clazomene, Partheniæ, and Hippi called Chytophoria, hauing beene fometime Iflands: the fame, *Alexander* caufed to be vnited to the firme land for the fpace of two ftadia. There haue periſhed within-forth and beene drowned, Daphnus, Hermefia, and Sipylum, called before-time Tantalis, notwithftanding it had beene the chiefe citie of Mœonia, fituate in that place, where now is the meere or lake Sale. And for that cauſe Archæopolis fucceeded in that preeminence, and after it Colpe, and in ſtead thereof Lebade. As you returne from thence toward the fea fide, about twelue miles off, you come vpon the citie Smyrna, built by an Amazonite, but repaired and fortified by *Alexander* the Great. Situate

tuat it is pleaſantly vpon the riuer Melis, which hath his head and fource not far off. The moſt renowned hils in Aſia for the moſt part, ſpred themſelues at large in this tract, to wit, Maſtuſia, on the back ſide of Smyrna; and Termetis, that meets cloſe to the foot of Olympus. This hil Olympus endeth at the mountain Tmolus; Tmolus at Cadmus; and Cadmus at Taurus. When you are paſt Smyrna, you come into certain plains, occaſioned by the riuer Hermus, and therefore adopted in his name. This riuer hath his beginning neer to Doryleus a city of Phrygia, and takes into it many other cities, & principally Phryge, which giues name to the whole nation, and diuides Phrygia and Caria aſunder. Moreouer Lyllus & Crios, which alſo are big and great by reaſon of other riuers of Phrygia, Myſia, and Lydia, which enter into them. In the very mouth of this riuer ſtood ſomtime the towne Temnos; but now in the very vtmoſt nouke of the gulfe certain ſtony rocks called Myrmeces. Alſo the towne Leuce vpon the cape ſo called: ſomtime an Iſland it was: and laſt of all Phocæa, which limiteth and boundeth Ionia. But to returne to Smyrna; the moſt part of Æolia, whereof we will ſpeake anon, repaires commonly thither to their Parliament and Aſſiſes. Likewiſe the Macedonians, ſyrnamed Hircani, as alſo the Magnetes from Sipylum. But vnto Epheſus, which is another principal and famous citty of Aſia, reſort thoſe that dwell farther off, to wit, the Cæſarians, Metropolites, Cylbianes, the Myſo-Macedonians, as well the higher as the lower, the Maſtaurians, Brullites, Hyppepœnians, and Dios-Hieritæ.

Chap. XXX.

¶ *Æolis, Troas, and Pergamus.*

Aeolis, in old time Myſia, confronts vpon Ionia: ſo doth Troas, which bounds on the coaſt of Helleſpontus. Being then paſt Phocæa, you meet with the port Aſcanius, & the place where ſometime Lariſſa ſtood: and now Cyme, and Myrina which loueth to be called Sebaſtopolis. Within the firme land, Ægæ, Attalia, Poſidea, Neon-tichos, and Temnos. But vpon the coaſt, the riuer Titanus, and a city taking name thereof. The time was when a man might haue ſeen there the city Grynia: but now there is but an hauen and the bare ground; by reaſon that the Iſland is taken into it, and ioyned thereto. The towne Elæa is not farre from thence, and the riuer Caicus comming out of Myſia. Moreouer, the towne Pytane, and the Riuer Canaius. Other townes there were in old time, but they are loſt and periſhed, namely, Canæ, Lyſimachia, Atarnæa, Carenæ, Ciſthene, Cilla, Cocillum, Thebæ, Aſtyre, Chryſa, Paloeſtepſis, Gergithos, and Neandros. Yet at this day are to be ſeen the city Perpetene, & beyond it the tract and territory Heracleotes, the towne Coryphas, the riuer Gryliofolius, the quarter called Aphrodiſias, before-time Politice. Orgas the country, and Scepſis the new. The riuer Evenus, vpon the banke whereof ſtood once Lyrmeſſos, and Mileros, but now they are gon. In this tract is the mountain Ida. Moreouer, in the ſea coaſt, Adramytteos, ſomtime called Pedaſus, where the Parliament and Terme is holden, and whereof the gulfe is named Adramitteus. Other riuers be there beſides, to wit, Aſtron, Cormalos, Eryannos, Alabaſtros, and Hieros out of Ida. Within-forth be Gargara, a towne and hill both. And then again toward the ſea ſide, Antandros, before-time called Edonis: then, Cymeris, and Aſſos, which alſo is Apollonia. Long ſince alſo there was a towne called Palamedium. After all theſe, you come vpon the cape Leolon, the middle frontier between Æolus and Troas. And there had bin in antient time the city Polymedia, and Cryſſa, with another Laryſſa alſo. As for the Temple Smintheum it remaineth ſtill. But farther within, the towne Colone that was, is now decayed and gon, and the traffique and negotiation in all affaires turned from thence to Adramytteum. Now as touching the territorie of the Apolloniates, after you be paſt the riuer Rhyndicus, you finde theſe States; the Ereſians, Miletopolites, Pœmanenes, Macedonians, Aſchilacæ, Polychnæi, Pionites, Cilices, and Mandagandenes. In Myſia, the Abrettines, and thoſe called Helleſpontij; beſides thoſe of baſe account and eſtimation. The firſt city you encounter in Troas, is Amaxitus: then Cebrenia and Troas it ſelfe, named alſo Antigonia, now Alexandria, and is entituled a Roman Colony. Beyond Troas ſtandeth the towne Nee: there runneth alſo Scamander, a riuer nauigable; and Sigæum, a Towne ſometime, vpon the cape ſo called. At length you come to the hauen of the Greeks, into which Xanthus and Somoeis runne ioyntly together, as

also Palæ-Scamander, but first it maketh a lake. The rest that *Homer* so much speaks of, namely Rhæsius, Heptaporus, Caresus, and Rhodius, there is no mention or token remaining of them: as for the riuer Granicus, it runneth from diuers parts into the chanel of Propontis. Yet there is at this day a little city called Scamandria: and one mile and a halfe from the port or sea, the free city Ilium, that enioyeth many immunties and liberties; of which towne goeth all that great name. Without this gulfe lieth the coast Rhœtea, inhabited with these townes vpon it, namely, Rhœteum, Dardanium, and Arisbe. There stood sometimes also Acheleum, a towne neere vnto the tombe of *Achilles*; founded first by the Mityleneans, and afterwards re-edified by the Athenians, vpon the Bay Sigæum, vnder which his fleet rode at anchor. There also was Acantium, built by the Rhodians, in another coine or canton of that coast, where *Aiax* was interred, a place thirty stadia distant from Sigæum, and the very Bay wherein his fleet also lay at harbour. Aboue Æolis and one part of Troas, within the Continent and firme land there is the towne called Teuthrania, which the Mysians in old time held. And there springeth Caicus the riuer aboue said. A large countrey this is of it selfe, and especially when it was vnited to Mysia, and all so called: containing in it Pioniæ, Andera, Cale, Stabulum, Conisium, Tegium, Balcea, Tiare, Teuthrane, Sarnaca, Halisernę, Lycide, Parthenium, Thymbrum, Oxiopum, Lygdanum, Apollonia, and Pergamus the goodliest city of them all by many degrees: through it passeth the riuer Selinus, and Cætius runneth hard vnder it, issuing out of the mountain Pindasus. And not far from thence is Elea, which as we said standeth vpon the strond. And verily all that tract and iurisdiction is of that city named Perganena. To the Parliament and judiciall Assises there resort the Thyatyrenes, Mygdones, Mossines, Bregmenteni, Hieracomitæ, Perpereni, Tyareni, Hierapolenses, Harmatapolites, Attalenses, Pantaenses, Apollonidenses, and other pety cities of no name and account. As for Dardanium, a pretty towne it is, threescore and ten stadia from Rhœteum. Eightreene miles from thence is the cape Trapeza, where the sea beginneth to rush roughly into the streight Hellespont. *Eratosthenes* mine Authour saith, That the cities of the Solymi, Leleges, Bebrices, Colycantij and Trepsedores somtime flourished, but now are vtterly perished. *Isidorus* reporteth as much of the Arymeos and Capretæ, the very place where Apamia was built by *Seleucus*, betweene Cilicia, Cappadocia, Cataonia, and Armenia: and for that he had vanquished most fierce and cruell nations, at the first he named it Damea.

Chap. XXXI.

¶ *The Islands lying before little Asia, and in the Pamphylian sea. Also Rhodus, Samus, and Chios.*

THe first Island of Asia is iust against the mouth or channell of Nilus, called Canopicus of *Canopus*, (as men say) the Pilot of K. *Menelaus*. The second is Pharus, which is ioined to Alexandria by a bridge: in old time it was a daies sailing from Ægypt to it: and now by fires from a watch-tower sailers are directed in the night along the coast of Egypt. *Cæsar* Dictator erected therein a colony. And in truth it serueth in right good stead as a Lanthorne: for the hauens about Alexandria be very dangerous and deceitfull, by reason of the barres and shelues in the sea: and there are but three chanels and no more, by which a man may passe safely to Alexandria, to wit, Tegamum, Posideum, and Taurus. Next to that Isle, in the Phœnician sea before Ioppa, lies Paria, an Isle of no great compasse, for it is all one town. This is the place, folke say, where lady *Andromeda* was exposed and cast out to a monster. Moreouer, Aredos, the Isle before named, between which and the Continent there is a fountaine, as *Mutianus* writeth, in the sea where it is fifty cubits deep, out of which fresh water is drawne and conueighed from the very bottome of the sea, through pipes made of leather. As for the Pamphylian sea, it hath some smal Islands of little or no reckoning. In the Cicilian sea there is Cyprus, one of the fiue greatest in those parts, and it lieth East and West full against Cilicia and Syria. The Seate it was in times past, whereunto nine Kingdomes did homage, and of which they held. *Timosthenes* saith, That it contained in circuit foure hundred and nineteene miles and an halfe: but *Isidorus* is of opinion, that it is but three hundred seuenty fiue miles about. The ful length thereof

thereof betweene the two capes, Dinaretas and Acamas, which is Southward, *Artemidorus* reporteth to bea hundred and sixtie miles and a halfe: and *Timosthenes* two hundred; who saith besides, that sometime it was called Acamantis: according to *Philonides*, Cerastis: after *Xenagoras*, Aspelia, Amathusia, and Macatia: *Astynomus* calleth it Cryptos and Colinia. Townes there be in it fifteene, Paphos, and Palepaphos (that is, Paphos the new, and Paphos the old,) Curias, Citium, Corineum, Salamis, Amathus, Lepathos, Solœ, Tamasseus, Epidarum, Chytri, Arsinoe, Carpasium, and Golgi. There were in it besides, Cinirya, Marium and Idalium: but now are they come to nothing. And from the cape Anemurium in Cilicia, it is fifty miles distant. All that sea which lieth betweene it and Cilicia, they call Aulon Cilicium; that is to say, The plaine of Cilicia. In this tract is the Island Elæusa: and foure others besides, euen before the cape, named Clides, ouer-against Syria. Likewise one more, named Stiria, at the other cape or point of Cilicia. Moreouer, against Neampaphos, [*i.* new Paphos] the Isle Hierocepia. Against Salamis, Salaminæ. Moreouer in the Lycian sea there be Isles, Illyris, Telendos, Attelebussa, and three Cypriæ, all barren and fruitlesse: besides Dionysia, before-time called Caretha. Moreouer, against the promontory of Taurus, and the Chelidoniæ, hurtfull and dangerous to saylers: and besides them as many more, together with the towne Leucola, called Pactiæ, namely, Lasia, Nymphous, Macris, Megista, in which the citie that stood is gone. Besides these, many others there were, but of no importance. But ouer-against the cape Chimera, Dolichiste, Chirogilium, Crambussa, Rhoge, Enagora of eight miles. Against Dædalion, two: against Cryeon, three: Stongyle, moreouer, against Sidynia, which king *Antiochus* founded: and toward the riuer Glaucus; Laguse, Macris, Didymæ, Helbo, Scope, Aspis, and Telandria: howbeit, the towne in it is sunke and gone: last of all the Isle Rhodussa, next to the harborough or hauen Caunus. But the faireſt of all is the Isle Rhodes, a free state, and subiect to none: It containeth in compasse an hundred and thirtie miles, or if we rather giue credit to *Isidorus*, an hundred and three. Three great townes there be in it well peopled, Lindus, Camirus, and Ialysus, now called Rhodes. By the account of *Isidorus* it is from Alexandria in Ægypt, fiue hundred seuenty and eight miles: but according to *Eratosthenes* fiue hundred sixty and nine: after *Mutianus* fiue hundred, and from Cyprus foure hundred and sixteene. Many names hath it been knowne by in times past, to wit, Ophyusa, Asteria, Æthræa, Trinacria, Corymbia, Pœessa, Atabyria of king *Atabyris*: and finally, Macaria, and Oloessa. Many other Islands be subiect vnto it, and namely Carpathus (which gaue name to the sea Carpathium) Casos, Achme in times past: and Niseros, distant from Gnidos twelue miles and an halfe, which heretofore had beene called Porphyris. And in the same raunge, Syme, betweene Rhodes and Gnidus, and is in circuit six and thirtie miles and a halfe. Enriched this Island is with eight commodious hauens. Ouer and besides these, there lie about Rhodes, Cyclopis, Teganon, Cordylusa, foure vnder the name of Diabete: Hymos, Chalcis, wherein standeth a good towne: Seutlusa, Narthecusa, Dimastos, and Progne. Being past Gnidos, yee shall discouer Ciferussa, Therionarce, Calydne beautified with three townes, to wit, Notium, Nisyrus, Mendeterus: with Arconesus the Isle, wherein standeth the towne Ceramus. Vpon the coast of Caria, the Islands, twenty in number, called Argiæ: besides, Hyetussa, Lepsia, and Leros. But the goodliest & most principall of all others in that coast is Cos, which lieth from Halicarnassus fifteene miles; and in compasse about, it beareth an hundred miles: as men thinke, Merope it was called: as *Staphylus* saith, Cos: but according to *Dionysius*, Meropis: and afterwards Nymphæa. This Isle is fortified with the mount Prion: and as some thinke, Nisyris the Island, named before-time Porphyris, was of old vnited to this, and afterwards dismembred from it. Beyond this Island yee may discouer Carianda, with a towne in it: and not farre from Halicarnassus, Pidosus. Moreouer, in the gulfe Ceramicus, Priaponnesus, Hipponesus, Pyra, Mya, Lampsemandus, Passala, Crusa, Pyrrhe. Sepiussa, Melano. And within a little of the maine, another called Cinedopolis, by occasion of certain Catamites and shamefull baggages that king *Alexander* the Great left there. The coast of Ionia hath in the sea the Islands Ægeæ and Corseæ, besides Icaros, spoken of before. Also Lade, before-time called Latæ: and among some other little ones of no worth, the two Camelides neer to Miletus. Moreouer, Mycalum, Trogyliæ, Trepsilion, Argennon, Sardalion: & the free Island Samos, which in circuit hath fourescore and seuen miles, or as *Isidorus* thinkes, a hundred. *Aristotle* writeth, how at the first it was called Parrhania, afterwards Dryusa, and then Anthemusa.

Aristocritus giueth it moreouer other names, to wit, Melamphyllus, yea, and Cyparissia: others terme it Partheno-arusa, and Stephane. Riuers in it be Imbrasus, Chesius, and Ibettes: fountaines of fresh water, Gigarto, and Leucothea: but no other hils, saue only Cercetius. There lie adioyning to it other Ilands besides, namely, Rhypara, Nymphæa, and Achillea. Fourescore and thirteene miles from it, you may discouer Chios, a free state, with a towne in it, which is an Iland as renowned euery way as Samos: *Ephorus* by the ancient name calleth it Æthalia: *Metrodorus* and *Theobulus*, Chia, of a certaine lady Nymph, whose name was *Chio*: others supposed it was so called of Chion, *i.* Snow: and some would haue it to be Macris and Pityusa. An hill there is in it called Pellenæas, where the good marble is digged, called Chium. The ancient Geographers haue written, That it is a hundred twenty and fiue miles about; and *Isidorus* addeth nine more. Scituate it is betweene Samos and Lesbos, full opposite vnto the cape Erythræ. Neere vnto it lie Thalluſa (which some write Dapnusa,) Oenuſſa, Elaphires, Eurysanassa, Arginussa with a towne. Now are all these about Ephesus, as also the Isles of *Pisistratus*, so called: and those which are named Anthinæ, to wit, Myonnesus, and Diareusa. In both these the townes that were, be lost through water. Furthermore, the Iland Porosselenæ with a towne in it, Cerciæ, Halone, Commone, Illetia, Lepria, and Rhesphenia, Procuſa, Bolbulæ, Phanæ, Priapos, Syce, Melane, Ænare, Siduſa, Pela, Drymuſa, Anydros, Scopelos, Sycuſſa, Marathuſſa, Psile, Perirheuſa, and many others of no reckoning. But among the Isles of name, is that of Teos, lying farther in the deepe sea, which hath a towne in it: and lieth from Chios foureſcore and one miles, and as much from the Bay Erythræ. Neere vnto Smyrna are the Islands Peristerides, Caticrta, Alopece, Elaeuſſa, Bachina, Pyſtira, Cronmyonneſus, and Megale. And iuſt before Troas, the Isles Asæaniæ and three Plateæ. Then the Lamiæ, and two Plitaniæ. Moreouer, the Islands Plate, Scopelos, Getone, Artheidon, Celæ, Laguſſæ, and Didymæ. But the moſt ſtately of all others in this sea, is Lesbos, which lies from Chios threeſcore and fiue miles. Named it was in times paſt, Hemeræ, Laſia, Pelasgia, Ægira, Æthiope and Macaria: within it were eight townes of name; whereof one, namely Pyrrha, is swallowed vp of the sea: and another, to wit, Arisbe, ouerthrown by an earthquake. As for the Isle Methymna was peopled from Antiſſa, which was vnited to it, and wherein were eight townes, and is about seuen and thirtie miles from * Asia the leſſe. As for the townes Agamede and Hiera which were in it, gone they be now and vtterly perished. Yet the e remaine Ereſos, Pyrrha, and Mitylenæ, which hath continued for fiue hundred yeeres mighty and puiſſant. *Isidorus* saith, That this Iland is in circuit about a hundred seuenty and three miles: but the old Geographers, a hundred ninety and fiue. In it are these mountaines, Lepethymus, Ordymnus, Mariſtus, Creon, and Olympus. Eight miles and a halfe it is from the Continent, where it lieth neereſt. About this Iland Lesbos, there lie neere at hand other little ones, namely, Saudalion, and the fiue Leucæ. Of which Cydonea is one, wherein is a fountaine of hot water. As for Argenuſſæ, from thence to Ægæ is reckoned foure miles. There are besides in this coast Phelluſa, & Pedua. Now without Hellespont, ouer-against the bay and cape Sigeum, lieth the Isle Tenedus, called sometimes Leucophrys, Phœnice, and Lymeſſos. From Lesbos it is six and fifty miles, and from Sigæum twelue miles and a halfe.

* Nacolia

Chap. XXXII.

¶ *Hellespontus, Mysia, Phrygia, Gallatia, Bithynia, Bosphorus.*

Archipelago.

IEt vs now leaue the Isles in the sea Ægeum, and come to Hellespont, now called the streights of Callipolis: whereinto the maine sea gushes with a mighty force and violence, with his gulfes and whirlepooles, digging before him a way, vntil he haue limited and diuided Asia from Europe. The promontory first appearing there, we named Trapeza. From which tenne miles off, standeth the towne Abidum, where the streights are but seuen stadia ouer. Beyond it is Percote the towne: and Lampsacum, called before-time Pityusa. Moreouer, the Colonie Parium, which *Homer* named Adrastia. Moreouer, the towne Priapos, the riuer Æsepus, and the cape Zelia. Then come ye to Propontus, for so is the place called where the sea begins to enlarge it selfe. Into this channell runneth the riuer Granicum, which maketh the haue Sarice, where once stood a towne. Beyond it there is an Iland, which *Alexander* the Great ioined to the Continent by two bridges, according to *Strabo*, in which standeth the towne Cyzicum,

zicum, founded by the Milesians, called heretofore Arconnesos, Dolionis, & Dindymis, neere the top whereof is the mountaine Dindymus. When ye are beyond Cizycum, you meet with these townes besides, Placia, Ariacos, Scylacum, & behind them, the hill Olympus, called somtime Mæsius. Also the city Olympena. The riuers Horisius and Rhyndacus, named heretofore Lycus. This riuer taketh his beginning in the marish or meere Artynia, neere to Miletopolis. It receiueth into it Mareſtos, and many others, and parteth Asia from Bithynia. This region in antient time was called Cronia: after, Theſſalis: then Malianda, and Strymonis. All this nation of these quarters, *Homer* named Halizones, for that they be enuironed with the sea. Therein stood in old time a mighty great city named Attuſa. At this day it hath 15 cities, amongst which is Gordiu-come, now called Iuliopolis: and in the very coast vpon the sea, Daſcylos. Go further on and ye meet with the riuer Gebes: and within the main, the towne Helgas, the same that Germanicopolis, knowne also by another name, Booſcœtè, as also Apamea, now called Myrtea of the Colophonians. Being past it, you come to the riuer Etheleum, the antient limit of Troas, where Mysia beginneth. Afterwards you enter into the gulfe of Bryllion, whereinto runneth the riuer Aſcanium, vpon which standeth the towne Bryllion, and beyond it you shall see the riuers Helas and Cios, together with a town of that name. A mart town this was, whereto reſorted the Phrygians that border neere to it, for to traffique and furniſh themselues with merchandiſe: built verily it was by the Milesians: but the place whereon it stood was called Aſcania of Phrygia. And therefore me-thinks we cannot do better than euen here to speake of that country. Phrygia then spreadeth out aboue Troas and the nations before-named, from the cape Lectus vnto the riuer Etheleus. It confronteth on the North side vpon part of Galatia, Southward it boundeth hard to Lycaonia, Piſidia, and Mygdonia. And on the East part it reacheth to Cappadocia. The townes of greateſt name, besides those before rehearsed, be Ancyra, Andria, Celenæ, Coloſſæ, Carina, Cotiaion, Ceranæ, Iconium, and Midaion. Certain Authors I haue, who write, that out of Europe there come to inhabit these parts, the Myſi, Bryges, and Thyni, of whom are descended and likewise named, the Myſians, Phrygians, and Bithynians.

And euen here I think it good to write also of Galatia, which lying higher than Phrygia, yet poſſeſſeth a greater part of the plaine countrey thereof, yea and the capitall place of it, sometime called Gordium. They that inhabited and held that quarter of Phrygia were Gaules, called Toliſtobogi, Voturi, and Ambitui: but they that occupied the countreys of Mæonia and Paphlagonia were named Trochmi. This region confronteth Cappadocia on the North and East side, and the moſt fruitfull part thereof the Tectoſages and Teutobodiaci kept in their poſſeſſion. And so much for the principall nations of this countrey. As for the States, Tetrarchies, and regiments, there be in all 195. The townes are these: of the Tectoſages, Ancyra: of the Trochmi, Tavium: of the Toliſtobogians, Peſinus. Besides these, there be States of good account, Attalenſes, Araſenſes, Comenſes, Dioſ-hieronitæ, Lyſtreni, Neapolitani, Oeandenſes, Seleucenſes, Sebaſteni, Timmoniacenſes, and Tebaſeni. This Galatia extendeth euen as far as to Gabalia and Milyæ in Pamphylia, which are scituate about Baris: also Cyllanticum and Oroadicum, the marches of Piſidia, likewise Obigene, part of Lycaonia. Rivers there be in it, beside those before named, Sangarium and Gallus, of which riuer, the gelded priests of dame *Cybelæ*, mother of the gods, were named Galli. Now it reſteth to speake of the towns vpon the sea coast. Yet I cannot ouerpaſſe Pruſa neere to Cios, which lieth farre within the countrey of Bithynia, which *Anniball* founded at the foot of the hill Olympus: from Pruſa to Nicæa are counted 25 miles: in which way lieth the lake Aſcanius betweene. Then come you to Nicæa in the very vtmost part of the gulf Aſcanium, which before was called Olbia: also to another Pruſa, built vnder the mountaine Hippius. Once there were in this coast Pythopolis, Parthenopolis, and Coryphanta. And now there be vpon the sea side these riuers, Æſius, Bryazon, Plataneus, Areus, Siros, Gendos, named also Chryſorrhoas. The promontory also, vpon which stood the towne Megaricum. Then the gulfe or arme of the sea which was called Craſpedites, for that that towne before named stood as it were in a fold, plait, or nouke thereof. Sometimes also there was the towne Aſtacum, whereupon the Creeke tooke the name of Aſtacenus. Moreouer, in antient time, the Towne Libyſſa, by report, was planted there: But now there remaineth nothing else to be seen but the tombe of *Anniball*. But in the inmoſt part of the Gulfe, where it endeth, there standeth the goodly faire City of Bithynia called Nicomedia.

media. The cape Leucatas, which incloseth the gulfe Astarenus, is from Nicomedia 42 miles and halfe. Being past this gulfe, the sea begins to streighten again, and the land to meet neer together; and these streights reach as far as Bosphorus in Thracia. Vpon these streights stands the free city Chalcedon, 72 miles and a halfe from Nicomedia. Before-time it was called Procerastis: then Compusa: afterwards, the city of the Blind, for that they who founded it, being in a place but 7 stadia from Bizantium, where was a seat in all respects more commodious and fit for a city, were so blind as not to chuse it for the plot of Chalcedon. But within the firme land of Bithynia is the colony Apamena: and there inhabit also the Agrippenses, Iuliopolites, and they of Bithynium. Moreouer, for riuers ye haue Syrium, Lapsias, Pharmicas, Alces, Crynis, Lylæus, Scopius, Hieras, which parteth Bithynia from Galatia. Beyond Chalcedon stood Chrysopolis: then Nicopolis, of which the gulfe still retaines the name, wherein is the hauen of Amycus: the cape Naulocum, Estia, wherein is the temple of *Neptune*: and the Bosphorus, a streight halfe a mile ouer, which now once again parteth Asia and Europe. From Chalcedon it is 12 miles and an halfe. There beginneth the sea to open wider, where it is 8 miles & a quarter ouer, in that place where stood once the towne Philopolis. All the maritime coasts are inhabited by the Thyni, but the inland parts by the Bithynians. Lo here an end of Asia, and of 282 nations, which are reckoned from the limits and gulf of Lycia, vnto the streights of Constantinople. The space of the streights of Hellespont and Propontis together, vntill you come to Bosphorus in Thracia containeth in length 188 miles, as we haue before said. From Chalcedon to Sigeum, by the computation of *Isidor*, are 372 miles and a halfe. Islands lying in Propontis before Cyzicum, are these, Elaphonnesus, from whence commeth the Cyzicen marble; and the same Isle was called Neuris, and Proconnesus. Then follow Ophyusa, Acanthus, Phœbe, Scopelos, Porphyrione, and Halone with a towne. Moreouer, Delphacia and Polydora, also Artacæon, with the towne. Furthermore, ouer against Nicomedia is Demonnesos: likewise beyond Heraclea, iust against Bithynia, is Thynias, which the Barbarians call Bithynia. Ouer and besides, Antiochia: and against the fosse or riuer Rhyndacus, Besbicos, 18 miles about. Last of all, Elæa, two Rhodussæ, Erebinthus, Magale, Chalcitis, and Pityodes.

THE SIXTH BOOKE OF THE HISTORIE OF NATVRE, WRITTEN BY C. PLINIVS SECVNDVS.

Chap. I.

¶ *Pontus Euxinus.*

THe sea called Pontus Euxinus, and named by the Greeks in old time, Axenos, for the hard vsage that passengers found at the hands of those sauage Nations vpon the coasts thereof, is spred also betwixt Europ and Asia, vpon a very spite and speciall enuy of Nature, as it seems, to the earth, and a wilfull desire to maintaine the sea still in his greatnesse, and to fulfill his greedy and endlesse appetite. For shee was not contented to haue inuironed the whole earth, with the main Ocean, yea and taken from it a great part thereof, with exceeding rage ouerflowing the same, and laying all empty and naked: it sufficed not, I say, to haue broken through the mountaines, and so to rush in, and after the sea had dismembred * Caspe from Affricke, to haue

* south of Italian.

haue swalloved vp much more by far than is left behind to be seen: no nor to haue let Propontis gush through Hellespont, and so to encroach again vpon the earth and gaine more ground: vnlesse from the streights of Bosphorus also he enlarge himselfe into another huge and vast sea, and yet is neuer content, vntill the lake Mœotis also with his streight, meet with him as he thus spreadeth abroad and floweth at liberty, and so ioine together and part as it were, their stolne good betweene them. And verily that all this is happened maugre the earth, and that it made all resistance that it could, appeareth euidently by so many streights and narrow passages lying between these two elements of so contrary nature (considering that in Hellespont, the space is not aboue 875 paces from land to land; and at the two Bosphori the sea is so passeable, that oxen or kine may swim at ease from the one side to the other: and hereupon they both tooke their name:) the which vicinitie serueth very wel to entertaine and nourish amity among nations, separated by nature one from another; and in this disunion as it were, appeareth yet a brothely fellowship and vnitie. For the cocks may be heard to crow, and the dogs to bark, from the one side to the other; yea and men out of these two worlds may parly one to another with audible voice, and haue commerce of speech together, if the weather be calme, and that the windes doe not carry away the sound thereof.

Well, the measure some haue taken of the sea, from Bosphorus Thracius to the lake of Mœotis, and haue accounted it to be 1438 miles and a halfe. But *Eratosthenes* reckoneth it lesse by one hundred. *Agrippa* saith, that from Chalcedon to Phacis, is a thousand miles, and so to Bosphorus Cimmerius 360 miles. As for vs we will set downe summarily and in generall, the distances of places, according to the moderne knowledge of our nation in these daies, forasmuch as our armies haue warred in the very streight and mouth of this Cimmerian streight.

Being passed then from the streight of Bosphorus Thracius, we meet with the riuer Rhebas, which some haue called Rhœsus; and beyond it Psillis another riuer; then come we to the port of Calpas, and Sangarius one of the principall riuers of Asia; it ariseth in Phrygia, it receiueth other huge riuers into it, and among the rest Tembrogius and Gallus. The same Sangarius was called also Coralius. After this riuer, begin the gulfes Mariandini, vpon which is to be seen the towne Heraclea, scituate vpon the riuer Lycus. It is from the mouth of Pontus 200 miles. Beyond it is the port Acone, cursed for the venomous herbe and poisonous Aconitum, which taketh name thereof. Also the hole or caue Acherusia. Riuers also there be, Pedopiles, Callichorum and Sonantes. One towne, Tium, eight and thirty miles from Heraclea: and last of all, the riuer Bilis.

Chap. II.

¶ *The nation of the Paphlagonians and Cappadocians.*

BEyond this riuer Bilis, is the countrey Paphlagonia, which some haue named Pylemerina, and it is inclosed with Galatia behinde it. The first towne ye meet in it, is Mastya, built by the Milesians: and next to it, is Cromna. In this quarter the Heneti inhabit, as *Cornelius Nepos* saith. Moreouer, from thence the Venetians in Italy, who beare their name, are descended as he would haue vs beleeue. Neere to the said towne Cromna, is another called Sesamum in times past, and now Amastris. Also the mountaine Cytorus, 64 miles from Tium. When you are gone past this mountain, you shall come to Cimolus and Stephane, two townes, and likewise to the riuer Parthenius; and so forward to the cape and promontory Corambis, which reacheth forth a mighty way into the sea: and it is from the mouth of the sea Pontus 315 miles, or as others rather thinke, 350. As far also it is from the streight Cimmerius, or as some would rather haue it, 312 miles and a halfe. A towne there was also in times past of that name; and another likewise beyond it called Arminum: but now, there is to be seen the colony Sinope, 164 miles from Citorum. Being past it, you fall vpon the riuer Varetum, the people of Cappadocia, the townes Gazima and Gazelum, and the riuer Halyto, which issuing out of the foot of the hill Taurus, passeth through Cataonia and Cappadocia. Then meet you with these towns following, Gangre, Carissa, and the free city Amisum, which is from Sinope 130 miles. As you trauell farther, you shall see a gulfe carrying the name of the said towne, where the sea runneth so far within the land, that it seems to make Asia well-neare an Island: for from thence vnto the gulf Issicus in Cilicia is not aboue 200 miles through the continent. In al which tract, there be

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no more than three nations which iustly and by good right, may be called Greekes, to wit, the Dorians, Ionians, and Æolians; for all the rest are reputed barbarous. Vnto Amisum, there ioined the towne Eupatoria, founded by K. *Mithridates*; and after that he was vanquished, both together tooke the name of Pompeiopolis.

Chap. III.

¶ *Cappadocia.*

IN Cappadocia, there is a city well within the land, called Archelais, scituate vpon the riuer Halys: which *Claudius Cæsar* the Emperor erected as a colony, and peopled it with Romane souldiers. There is besides a towne which the riuer Sarus runneth vnder: also Neo cæsarea, which Lycus passeth by: and Amasia with the riuer Iris running vnder it, within the countrey Gazacena. Moreouer, in the quarter called Colopena, there stand Sebastia & Sebastopolis, little townes indeed, howbeit comparable with those aboue said. In the other part of Cappadocia there is the city Melita, built by queene *Semiramis*, not far from Euphrates: also, Dio-Cæsarea, Tyana, Castabala, Magnopolis, Zela, and vnder the mountaine Argæus, Mazaca, which now is named Cæsarea. That part of Cappadocia which lieth before Armenia the greater, is called Melitene: that which bordereth vpon Comagene, Cataonia: vpon Phrygia, Garsauritis: vpon Sargaurasana, Cammaneum; and finally vpon Galatia, Morimene. And there the riuer Cappadox separateth the one from the other. Of this riuer the Cappadocians took name, whereas before time they were called Leucosyri: as for the lesse Armenia, the riuer Lycus diuideth it from Neo-Cæsarea beforesaid. Within the country there runneth also the great riuer Ceraunus. But on the coast side, when you are past the city Amysum, you meet with the town Lycastum; and the riuer Chadisia; and once past them, you enter into the countrey Themiscyra. In this quarter also you may see the riuer Iris, bringing down with it another riuer Lycus that runneth into it. And in the midland parts there is the city Zicia, ennobled for the ouerthrow of *Triarius*, whom *C. Cæsar* defeated with his whole army. But in the coast againe you shall encounter the riuer Thermodon, which issueth from before a castle named Phanaroea, and passeth beside the foot of the mountaine Amazonius. In which place there stood somtime a towne of that name, and other fiue, namely, Phamizonium, Themiscyra, Sotira, Amasia, Comana, at this present called Manteium.

Chap. IV.

¶ *The people of the region Themiscyrene.*

MOreouer, in Pontus ye haue the nations of the Genetæ & the Chalybes, together with a town of Cotyi. People besides called Tibareni, and Mossyni, who brand and marke their body with hot fearing yrons. Also the nation of the Macrocephali, with the towne Cerasus, and the port Cordulæ. Beyond which you come to a people named Bechires, and Buzeri, and to the riuer Melas. And so forward to the quarter of the Macrones, Sideni, & so to the riuer Sydenum, vpon which is scituat the town Polemonium, distant from Amisum 220 miles: where ye shall finde the riuers Iasonius and Melanthius; and a towne 80 miles from Amisum, called Pharnacea; the castle and riuer of Tripolis. Item, Philocalia, and Liuiopolis without a riuer: and lastly the imperiall & free city Trapezus, enuironed with a high mountain, 100 miles from Pharnacea. And being past Trapezus, you enter into the country of the Armenochalybes, and Armenia the greater; which are 30 miles asunder. But vpon the coast you shall see the riuer Pyxites that runneth euen before Trapezus; and beyond it the country of the Sanni Heniochi. Moreouer, the riuer Absarus, in the mouth whereof there is a castle likewise so named, from Trapezus 150 miles. Behind the mountains of that quarter, you meet with the region Iberia; but in the coast therof the Heniochi, Ampreutæ and Lazi. The riuers Campseonysis, Nogrus, Bathys. When ye are once past them, you come into the country of the Colchians, where stands the town Matium, with the riuer Heracleum passing vnder it, & a Promontorie of that name, & last of all, the most renowned riuer of all Pontus, called Phasis: this riuer riseth from out of the Moschian mountains, & for 38 miles and an halfe, is nauigable, & beareth any great vessels whatsoeuer. And then for a great way it carrieth smaller bottoms, & hath ouer it

120 bridges. Beautified it was sometimes with many faire townes vpon the bankes thereof on both sides, and the principall of them all, were Tyritaum, Cygnus, and the city Phasis scituate in the very mouth thereof, as it falleth into the sea. But the goodliest city planted vpon this riuer, and most famous of all the rest was Æa, fifteene miles distant from the sea: where Hippos and Cyanos, two mighty great riuers, comming from diuers parts, enter both into the riuer Phasis. But now there is no count made of any but of Surium onely, which taketh name of the riuer Surium which runneth to it. And thus far we said that Phasis was capable of great ships. Among other riuers which it receiues, for number and greatnesse admirable, is the riuer Glaucus. In the fosse and mouth of this riuer Phasis, where hee is discharged into the sea, there be some little Ilands of no reckoning. And there, from Bsarus it is 75 miles. Being past Phasis you meet with another riuer called Charien: vpon which bordereth the nation of the Salæ, named in old time Phthirophagi and Suani, where you shall meet with the riuer Cobus, which issueth out of Caucasus, and runneth through the country of the Suani aboue-said. Then you come to another riuer Rhoas, and so forward to the region Eerectice: to the riuers Sigania, Tersos, Atelpos, Chrysorrhoas, and the people Absilæ: the castle Sebastopolis, an hundred miles from Phasis, the nation of the Sanigores, the towne Cygnus, the riuer and towne both called Pityus. And last of all ye arriue vpon the country of the Heniochæ, where be nations entituled with many and sundry names.

Chap. V.

¶ *The region of Colchis, the Achæi, and other nations in that tract.*

NExt followeth the region of Colchis, which is likewise in Pontus: wherin the mountaine Caucasus windes and turnes toward the Rhiphæan hils, as hath been said before, and that mountaine of the one side bendeth downe toward Euxinus, Pontus, and Mæotis; and of the other, encline th to the Caspian and Hircane seas. When ye are descended to the maritime coasts, ye shall find many barbarous and sauage nations there inhabiting, to wit, the Melanchlæni, and the Choruxi, where sometimes stood Dioscurias a city of the Cholchians, neere vnto the riuer Anthemus, which now lieth wast and dispeopled, notwithstanding it was so renowned in times past, that by the report of *Timosthenes*, there repaired thither and inhabited therein 300 nations of diuers languages. And euen afterwards our Romanes were forced to prouide themselues of 130 interpreters, when they would negotiate and traffick with the people in and about Dioscurias. Some there be that think how it was first founded by *Amphitus* and *Telchius*, who had the charge of the chariots of *Castor* and *Pollux*: for certain it is, that the fierce and wild nation of the Heniochi, are from them descended. Being past Dioscurias, you come vp the towne Heraclium, which from Sebastopolis is 80 miles distant: and so forward to the Achæi, Mardi and Cercetæ: and after them to the Serri, and Cephalotomi. For within that tract stood the most rich and wealthy town Pitius, which by the Heniochians was ransacked and spoiled. On the backe part thereof inhabit the Epagerites [a nation of the Sarmatians] euen vpon the mountaine Caucasus: and on the other side of that hill, the Sauromatæ (the country is at this day called Tartaria the great.) Hither retired and fled king *Mithridates* in the time of *Claudius Cæsar* the Emperor: who made report, that the Thali dwell thereby, and confine East-ward vpon the very opening of the Caspian sea: which by his report remaineth dry, whensoeuer the sea doth ebbe. But now to turne vnto the coast neer vnto the Cercetæ, you meet with the riuer Icarusa, with a towne and riuer called Hierum, 136 miles from Heracleum. Then come yee to the cape Cronea, in the very ridge and high pitch whereof the Toretæ inhabit. But beneath it you may see the citie Sindica, 67 miles scituate from Hierum: and last of all, you arriue vpon the riuer Sceaceriges.

Chap. VI.

¶ *Mæotis, and the streights thereof called Bosphorus Cimmerius.*

FRom the said riuer to the very entrance of the Cimmerian Bosphorus are counted 88 miles and a halfe. But the length of the very demy Iland, which extendeth and stretcheth out between Pontus and Mæotis, is not aboue 87 miles and a halfe, and the breadth in no place lesse

lesse than two acres of land. This the paisants of that country do call Eione. The very coasts of this streight Bosphorus, both of Asia side and Europa, boweth and windeth like a curb to Mœotis. As touching the townes here planted, in the very first entry thereof standeth Hermonassa, and then Cepi, founded by the Milesians. Being past Cepi you come soone after to Stratilia, Phanagoria, and Apaturos, in manner vnpeopled and void: and last of all, in the very vtmost point of the mouth where it falleth into the sea, you arriue at the towne Cimmerius, named before-time Cerberian.

Chap. VII.

¶ *Nations about Mœotis.*

BEing passed Cimmerium, yon come to the very broad lake Mœotis, whereof we spake before in the Geography of Europe. Vpon the coast wherof, beyond Cimmerium on the side of Asia, inhabite the Mœotici, Vati, Serbi, Archi, Zingi, and Pesij. After this, you come to the great riuer Tanais, which runneth into Mœotis with two armes or branches: and on the sides of it dwell the Sarmations, an off-spring descended in old time (as men say) from the Medians: but so multiplied now, that they themselues are diuided and dispersed into many nations. And first of all are the Sauromatæ, surnamed Gynæcocratumeni; *i.* (as one would say) subiect to women: from whence the Amazones are prouided and furnished of men to serue their turne in stead of husbands. Next to them, are the Euasæ, Cottæ, Cicimeni, Messeniani, Costobocci, Choatræ, Zigæ, Dandari, Thussagetæ, and Turcæ, euen as far as the wildernesses, forrests chases, and rough vallies. But beyond them are the Arnuphæi, who confine vpon the mountaine Rhiphæi. As for as the riuer Tanais, the Scythians call it Silys: and Mœotis, they name Temerinda, that is to say, the mother of the sea, or rather, the seas end. In ancient time there stood a great towne vpon the very mouth of Tanais, where it falleth into the sea. As for the neighbour borders of this sea, inhabited they were sometime by the Lares: afterwards, by the Clazomenij, and Mœones: and in processe of time, by the Panticapenses. Some Authours write, that about Mœotis toward the higher mountaine Ceraunij, these nations following doe inhabit, to wit, first vpon the very coast and sea side, the Napææ: and aboue them, the Essedones, ioyning vpon the Colchy, and the high mountain [Corax.] After them, the Carmaces, the Oranes, Anticæ, Mazacæ, Ascantici, Acapeates, Agagammatæ, Phycari, Rhimosoli, and Ascomarci. Moreouer, vpon the hill Caucasus, the Icatales, Imaduches, Ranes, Anclaks, Tydians, Charastasei, and Asuciandes. Moreouer, along the riuer Lagous, issuing out of the mountaines Cathei, and into which Opharus runneth, these nations ensuing do dwell, to wit, the Caucadians, and the Opharites: beyond whom runneth the riuers Menotharus, and Imitues, out of the mountaines Cissij, which passeth through the Agedi, Carnapes, Gardei, Accisi, Gabri, and Gregari: and about the source or spring of this riuer Imitues, the people Imitui and Aparrheni. Others say, that the Suites, Auchetes, Saternei, and Asampates, inuaded and conquered these parts; and that the Tanaites and Nepheonites, were by them put to the edge of the sword, and not one person of them spared. Some write, that the riuer Opharius runneth through the Canteci, and the Sapæi: and that the riuer Tanais trauersed sometime through the Phatareans; Herticei, Spondolici, Synthietæ, Amassi, Issi, Catareti, Tagori, Catoni, Neripi, Agandei, Mandarei, Saturchei, and Spalei.

Chap. VIII.

¶ *Cappadocia.*

HItherto haue wee treated and gone through the nations and inhabitants of the coasts vpon the Mediterranian sea. Now are wee to speake of the people inhabiting the very midland parts of the maine within: wherein I protest, and deny not, but that I will deliuer many things otherwise than the ancient Geographers haue set downe: forasmuch as I haue made diligent search into the state of those regions, as wel by enquiry of *Domitius Corbulo* (who lately went with an army through those quarters (as of diuers kings and princes, who made repaire to Rome with sutes and supplications, but especially of those kings sons that were left as hostages in Rome. And first to begin with the nation of the Cappadocians. This is a country that

that of all others which bound vpon Pontus, reacheth farthest within the firm land; for on the left hand it passeth by both Armenias, the greater and the lesse, & Comagene: and on the right all those nations in Asia before-named, confining many others; and still preuailing with great might, growing on and climing Eastward vp to the mountain Taurus, it passeth beyond Lycaonia, Pisidia, and Cilicia: and with that quarter which is called Cataonia, pierceth aboue the tract of Antiochia, and reacheth as far as to the region Cyrrhestica, which lyeth well within that country. And therefore the length of Asia there, may containe 1250 miles, & the breadth 640.

Chap. IX.

¶ *Armenia the greater and the lesse.*

THe greater Armenia, beginning at the mountains Pariedri, is diuided from Cappadocia by the riuer Euphrates, as hath bin said before: & where the riuer Euphrates beginneth to turne his course from Mesopotamia, by the riuer Tigris as renowned as the other, both these riuers is it furnished withal, which is the cause that it taketh the name of Mesopotamia, as being scituate between them both. The main land which lyeth between, is possessed by the mountains of Arabia called Orei: howbeit, it extendeth vntil it confine vpon Adiabene. Being past it once, it is hemmed in with mountains that incounter it ouerthwart, which cause it to inlarge it selfe into a bredth on the left hand, as far as to the riuer Cyrus: and then it turneth euer crosse, vntill it meet with the riuer Araxes: but it carrieth his length into the lesse Armenia, confining stil vpon the riuer Absarus, which falleth into the Pontick sea: and the mountaines Pariedri (from which the said riuer issueth) which diuide it from the lesse Armenia. As for the riuer Cyrus, it springeth in the mountains Heniochij, which some called Coraxici. But Araxes issueth out of the same mountain from whence Euphrates commeth, and there is not aboue six miles space between them both. This riuer Araxes is augmented with the riuer Musis, and then himselfe loseth also his name, and as most haue thought, is carried by the riuer Cyrus into the Caspian sea: as for the townes of name in the lesse Armenia, they be these, Cæsarea, Asia, and Nicopolis. In the greater yee haue Arsamole, fast vpon the riuer Euphrates: likewise Carcathiocerta, scituate vpon Tigris. In the higher country, is the city Tigranocerta, built in the plain beneath, neere to Araxes, Artaxata. *Asidius* saith, that both the Armeniæ containe in all 500 miles. *Claudius Cæsar* reporteth, that in length from Dascusa to the confines of the Caspian sea, it taketh 1300 miles, and in bredth halfe so much, to wit, from Tigranocerta to Iberia. This is wel knowne, that diuided it is into certain regiments, which they call Strategians; and yet some of them in old time, were as large each of them as realmes and kingdomes: and to the number they were of 120, but such barbarous names they had, that they cannot well be set downe in writing. Enclosed it is Eastward with the mountains, but neither the hils Ceraunij, nor yet the region Adiabene, do presently and immediatly confine thereupon: for the country of the Sopheni lyeth between: then you come to the mountaines aforesaid, and being past them, you enter into the countrey of the Adiabenes. But on that coast where the plaines lie and the flat vallies, the next neighbors to Armenia, be the Menobardi and Mosceni. As for Adiabene, enuironed it is partly with the riuer Tigris, and partly compassed with an vnaccessible steep mountaines. On the left hand, it confineth vpon the Medians, and hath a prospect to the Caspian sea, the which commeth out of the Ocean (as we shall shew in meet and conuenient place) and is inclosed wholly within the mountains of Caucasus. As for the nations there inhabiting along the marches and confines of Armenia, now wil we speake of them.

Chap. X.

¶ *Albania, and Iberia.*

ALl the plaine country between Armenia and the riuer Cyrus, the Albanois of Asia do inhabit. Being past it, you enter anon into the Iberians region, who are separated from the Albanois aforesaid by the riuer Alazon, which runneth downe from the Caucasian hills into Cyrus. The townes of importance, in Albania, is Cabalaca, in Iberia, Harmastis, neere to the riuer Neoris: beyond which, is the region Thasie, and Triare, as farre as vnto the mountaines

tains Partedori. And when you are past them, you enter into the desarts of Cholchis: and on the side of them which lyeth toward the Ceraunij, the Armenochalybes do inhabit: and so forward you come into the tract and marches of the Moschi, which extend to the riuer Iberus, that runneth into Cyrus. Beneath them, inhabit the Sacassani, and beyond them the Macronians, who reach euen to the riuer Absarus. Thus you see how the plaines and the hanging of the hills in these parts are inhabited. Againe, from the marches and frontiers of Albania, all the forefront of the hils is taken vp and possessed by the sauage people of the Sylui; and beneath them, of the Lubienes, and so forward by the Didurians, and Sodij.

Chap. XI.

¶ *The gates and passages of the mountaine Caucasus.*

When ye are beyond the Sodij, you come to the Streights of the hill Caucasus, which many haue erroniously called Caspiæ Portæ. And certes, Nature hath performed a mightie piece of worke, in cleauing asunder at one instant those mountaines, where the gates were barred vp as it were with iron portculleises, whiles vnder the mids therof, the riuer Dyriodorus runneth: and on this side of it, standeth a strong fort and castle called Cumania, scituate vpon a rock, able to impeach an army neuer so puissant & innumerable that would passe thereby; in such fort, as in this place by means of these bar-gates, one part of the world is excluded from the other: and namely most of all they seeme to be set opposite as a rampart against Harmastis a towne of Iberia. But being passed these said gates, you come to the mountains Gordyei, where the Valli and Suarni, barbarous and sauage nations, are imployed onely in the mines of gold. Beyond them as far as to the Ponticke sea, you enter into the countrey of the Heniochi, wherof be many sorts, and soon after to the Achei. And thus much as touching this tract of the sea Ponticke, and of the most renowned gulfes of all others. Some haue set downe in writing, that between Pontus and the Caspian sea, it is not aboue 375 miles. *Cornelius Nepos* saith it is but 150. See into what great streights betweene both seas Asia is driuen again, and as it were thronged. *Claudius Cæsar* hath reported, that from Cimmerius Bosphorus to the Caspian sea, it is 150 miles, and that *Seleucus Nicator* purposed if he had liued, to cut the land through from the one side to the other: but in this purpose of his, himselfe was cut short and slain by *Ptolomæus Ceraunus*. To conclude, it is in manner held for certain, that from those gates of Caucasus vnto the Pontick sea, it is 200 miles, and no lesse.

Chap. XII.

¶ *The Islands in the Ponticke sea.*

In the Pontick sea lye the Islands Planctæ, otherwise Cyaneæ or Symplegades. Then Apollonia, named also Thynnias, for distinction sake from that other so named in Europe: it is from the continent one mile, and is in circuit three. Iust ouer-against Pharnacea, is the Isle Chalceritis, which the Greeks called Aria, consecrated as it were to *Mars*; wherein they say the foules that are, vsed to fight and flutter with their wings against all other birds that come thither.

Chap. XIII.

The Regions and people confining vpon the Scythian Ocean.

Hauing thus sufficiently discoursed of all the countries within the firme land of Asia, let vs now determine to passe ouer the Rhiphæan hills, and discouer the coasts of the Ocean which lie on the right hand of those hills. Wherein we haue to consider, that Asia is dashed and beaten vpon by this maine sea on three parts: to wit, on the North side, and there it is called Scythicus: on the East, where they call it Eous: and last from the South, and there they name it Indicus. And according to the sundry gulfes and creekes that it maketh, and the inhabitants by whom it passeth, many names it taketh. Howbeit, a great part of Asia toward the North, lieth desart, and hath in it much wilderneſſe vnhabitable, by reason of the exrreme cold of that frozen climat, so subiect to the Pole Artick. But being once past the vtmost quarter of the

the North-point, and came to the North-East where the Sun ariseth at midsommer, then you come to the Scythians. Beyond whom, and the very point of the North-pole and the winde from thence, some haue placed the Hyperborei; of whom we haue spoken at large in the treatise of Europe. On this side the Hyperborei, the first cape or promontory that you meet withall in the countrie Celtica, is named Lytarmis: and then you come vnto the riuer Carambucis, where by the forcible influence of the starres, the high mountains Rhiphæa, as being wearied, begin to settle and abase themselues lower. At the fall and descent of which mountains, I haue heard say, that certain people named Arnupheæ inhabited: a nation not much vnlike in their maner of life to the Hyperboreans. They haue their habitations in forrests; their feeding is vpon berries of trees: shorne they be all and shauen, for both men and women count it a shame to haue haire on their heads: otherwise they are ciuill enough in their conuersation and behauior: and therefore, by report, they are held for a sacred people and inuiolable, in so much as those cruell nations and inhumane that border vpon them, will offer them no abuse; neither do they respect them only, but also in regard and honour of them, they forbeare those also that flie vnto them as to a place of franchise and priuiledge. Goe beyond them once, you come among the *Scythians indeed, the Cimmerij, Cicianthi, Georgi, and the nation of the Amazons, & these confront the Caspian or Hircan sea: for it breaks forth of the deep Scithian Ocean, toward the back parts of Asia, and takes diuers names of the inhabitants coasting vpon it, but especially aboue all other of the Caspians & Hircaneans. *Clitarchus* is of this opinion, that this sea is full as great and large as Pontus Euxinus. And *Eratosthenes* sets downe the very measure and pourprise thereof: namely, from East to South along the coast of Caduſia and Albania, 5400 stadia: from thence by the Aratiaticks, Amarbi, and Hircanij, to the mouth of the riuer Zoum, 4800 stadia: from it to the mouth of Iaxartes where it falleth into the sea, 2400 stadia: which being put together amount in all to 1575 miles. *Artemidorus* counteth lesse by 25 miles. *Agrippa* in bounding out and limiting the circuit of the Caspian sea, & the regions coasting vpon it, together with them Armenia both the greater and the lesse, namely, Eastward with the Ocean of the Seres, Westward with the mountains of Caucasus; on the South side with the hill Taurus, and finally on the North with the Scithian Ocean, hath written, That the whole precinct and compasse of these parts may contain in length [so far as is known & discouered of those countries] 590 miles, and 290 in breadth. Yet for all this, there want not others who say, That the whole circuit of that sea, and begin at the very mouth aud firth thereof, ariseth to 2500 miles. As for this mouth aforesaid where it breakes into the sea it is very narrow, but exceeding long: howbeit when it begins once to enlarge it selfe and grow wide, it turns and fetcheth a compasse with horned points like to a quarter moone, and after the maner of a Scithian bow, as *M. Varro* saith; it windes along from his mouth toward the lake Mœotis. The first gulfe that it makes is called Scythicus; for the Scithians inhabit on both sides, and by meanes of the narrow streight between haue commerce and trafficke one with another: for of the one side are the Nomades and Sauromatæ, comprising vnder them many other nations of diuers names: and on the other, the Abzoæ, who haue no fewer states vnder them. At the very entry of this sea on the right hand, the Vdines, a people of the Scithians, dwell vpon the very point of this mouth: and then along the coast, the Albanois, a nation descended (as men say) from *Iason*; where the sea lying before them is called Albanum. This nation is spread also vpon the mountaines of Caucasus, and so along downe the hills as far as to the riuer Cyrus, which confines the marches between Armenia and Iberia, as hath bin said. Aboue the Maritime coasts of Albania & the Vdines country, the Sarmatians, called Vtidorsi, and Aroteres, are planted: and behinde them, the Amazones, whom we haue already shewed; who also are women Sauromatians. The riuers of Albani which fall into the sea, are Cassios and Albanos: and then Cambices, which hath his head in the Caucasian mountains: and soon after Cyrus, which arises out of the hills Corax, as before is said. Moreouer *Agrippa* writes, that this whole coast of Albanie (fortified with those high and inaccessable mountains of Caucasus) contains 425 miles. Now when you are past the riuer Cyrus, the Caspian sea begins to take that name, for that the Caspians doe inhabit the coasts thereof. And here the errour of many is to be laid open and corrected, euen of those also who were in the last voyage with *Corbulo* in Armenia with the Romane armie: for they tooke it, that those gates of Caucasus whereof we spake before, were the Caspian gates, and so called them: and the verie mappes and descriptions which are painted and sent from thence, beare that name and title.

* At this day the Moschouites, white & black Russians, Georgians, Amazonians, & the lesse Tartarie.

Likewise the menacing commandements, and threatning commissions sent out by *Nero* the Emperour for to gaine and conquer those gates, which through Iberia lead into Sarmatia, made mention of the gates Caspiæ there, which had in a manner no passage at all to the Caspian sea, by reason that the mountaine Caucasus empeached it. Howbeit in very truth, there be other gates so called, which joine vpon the Caspian nations, which wee had neuer knowne from the other, but by relation of those that accompanied *Alexander* the Great in his voyage and expedition to those parts. For the realme and kingdome of the Persians, which at this day wee take that the Parthians hold, lyeth aloft betweene the Persian and Hircane seas vpon the mountaines of Caucasus, in the very hanging and descent thereof, on both sides confining vpon Armenia the greater: and on that part which lieth to Comagene, confronteth and joineth (as we haue said) vpon Sephenia: and vpon it againe bordereth Adiabene, where the realme of the Assyrians doth begin: whereof Arbelitis, which boundeth next vpon Syria, taketh vp a good part: which is the countrie wherein *Alexander* the Great discomfited and vanquished *Darius*. All this tract, the Macedonians who entered with *Alexander*, surnamed Mygdonia, for the resemblance of that in Greece from which they came. Townes of name there be in it, Alexandria, and Antiochia, which they call Nisibis: and from Artaxata it is 750 miles. There was also another citie called Ninus, or Niniue, seated vpon the riuer Tygris, which regarded the West, which in times past was highly renowned. But on the other side, where it lieth toward the Caspian sea, lieth the region Atropatene, separated by the riuer Araxes, from Otene in Armenia: wherein is the citie Gazæ, 450 miles from Artaxata: and as many from Ecbatana in Media, whereon some part the Atropatenes doehold.

Chap. XIIII.

¶ *Media, and the gates Caspiæ.*

AS for Ecbatana the head citie of Media, *Seleucus* the king founded it: and it is from Seleucia the great 750 miles, and from the Caspian gates 20. The other great towns of importance in Media, be Phausia, Agamzua, and Apamia, named also Rhaphane. And as for the streights there, called the Caspian gates, the same reason is there of that name, as of the other by Caucasus; by reason that the mountaine is clouen and broken through, and hath so narrow a lane, that hardly a waine or cart is able to passe by it; and that for the length of 8 miles: all done by the picke-axe and mans hand. The rockes and cliffes that hang ouer on the one side and the other, be like as if they were scorched and half burnt: so dry and thirsty is all that tract, and without fresh water for 38 miles space: for all the liquor and moisture issuing out of those craggie rockes, runneth through it, which letteth the passage, and causeth folke to auoid that way. Besides, such a number of serpants doe there haunt, that no man dare passe that way but in winter onely.

Chap. XV.

¶ *Nations about the Hircane sea.*

VNto Adiabene, joyneth the countrie of the Carduchy, so called in times past, and now Cordueni, by which the riuer Tigris runneth: and vpon them the Paratitæ do confine, called also Paredoni: who keepe the hold of the Caspian gates aforesaid. On the other side of whom, you shall meet with the desarts of Parthia, and the mountaine Cithenus: but being passed that once, you come streight into the most pleasant and beautiful tract of the same Parthia, called Choara; and there stand two cities of the Parthians, built sometimes as forts opposite against the Medians: namely, Calliope & Issatis, scituate in times past vpon another rocke. As for the capitall citie of al Partia, Hecatompylos, it is from the Caspian gates aboue-said 133 miles. Thus you see how the kingdome of the Parthians also is limited & separat by these mountaines and streights. When a man is once gotten forth of these gates, presently he enters vpon the Caspians countrie, which reacheth as far as to the sea side, and gaue the name as well to it as to the gates afore-named. Howbeit al the region vpon the left hand is ful of mountains from whence backward to the riuer Cyrus, are by report 220 miles, but from that riuer if you wou'd go higher vp to those gates, you shal find it 700 miles. And in very truth from this place began *Alexander* to make the account and reckoning of his iournies, in that voyage of his to India,

A India, saying, that from those gates to the entrance of India, it was 15680 stadia: from thence to the city Bacha, which they call Zariaspa 3700, and so to the riuer Iaxartes 5 miles.

Chap. XVI.

¶ *Other Nations also.*

FRom the Caspians country Eastward, lieth the region called Zapanortene, & in it the land Daricum, the most fertile tract of all those parts. Then come you to the Tapyrians, Anariaci, Stauri and Hircani, at whose coasts the same sea begins to take the name Hircanum, euen from the riuer Syderis. About it are other riuers, to wit, Mazeras and Stratos, all issuing
B out of Caucasus. Out of the realme of Hircania, you enter into the country Margiana, so commendable for the warme Sun-shine weather there, and the only place in all that quarter which yeeldeth vines. Enuironed it is on euery side with goodly pleasant hils to the eie, for the compasse of 1500 stadia. Fortified it is besides, and affordeth hard accesse vnto it by reason of the sandy and barren desarts for the space of 120 miles. And scituat it is euen against the tract of Parthia, wherein *Alexander* the Great sometime had built Alexandria, which beeing rased and destroied by the Barbarians, *Antiochus* the son of *Seleucus* re-edified in the same place vpon the riuer Margus, which runs through it, together with another riuer Zodale, and it was called Syriana [or rather Seleucia.] Howbeit, he desired rather that it should be named Antiochia. This
C citie containeth in circuit 70 stadia: and into it, *Orodes* after that he had defeated *Crassus* & his hoast, brought all the Romans whom he had taken prisoners. Being past the high country Margiana, you come to the region of Mardi, a fierce & sauage people, subiect vnto none, they inhabit the mountain Caucasus, and reach as far as to the Bactrians. Beyond that tract are these nations, the Ochanes, Chomares, Berdrigei, Hermatotrophi, Bomarci, Commani, Marucæi, Mandrueni and Iatij. The riuers also Mandrus and Gridinus. Beyond inhabit the Chorasmij, Gandari, Attasini, Paricani, Sarangæ, Parrasini, Maratiani, Nasotiani, Aorsi, Gelæ, whom the Greeks called Caduśij, and the Matiani. Moreouer, in it stood the great towne Heraclea, built by *Alexander* the Great, which afterwards was subuerted and ouerthrowne: but when it was repaired
D again by *Antiochus*, he named it Achais. Beneath in the country, the Derbines do inhabit, thorough whose marches in the very midst runneth the riuer Oxus, which hath his beginning out of a lake called Oxus. Beyond them are the Syrmatæ, Oxij, Tagæ, Heniochi, Bateni, Saraparæ, and Bactrians, with their towne Zariaspe, called afterwards Bactrum, of the riuer Bactra. This nation inhabiteth the back parts of the hill Paropamisus, ouer against the source & spring of the riuer Indus, & is inuironed with the riuer Ochus. Beyond the Bactrians are the Sogdianes, & Panda the principal city of that country. In the very vtmost marches of their territory standeth the town Alexandria built by *Alexander* the Great, wherin are to be seen the altars and columnes, erected by *Hercules*, prince *Bacchus*, *Cyrus*, *Semiramis*, and *Alexander*: supposed and taken
E to be the very end of all their voiages in that part of the world, resting within the riuer Iaxartes, which the Scythians call Silys. For *Alexander* and his soldiers thought it had bin Tanais. Howbeit, captain *Demonax*, who serued vnder the kings *Seleucus* and *Antiochus*, passed ouer that riuer with an army; and at the end of his voiage set vp altars vnto *Apollo Didymæus*. And the *Demonax* we follow, especially in this description and Geographie of ours.

Chap. XVII.

¶ *The Scythian Nation.*

BEyond the realm Sogdiana, inhabit the Nations of the Scythians. The Persians were wont to call them in general Sacas, of a people adioyning vnto them, so named. In old time they were known by the name of Arameans. And on the other side, the Scythians for their part vsed to term the Persians, Chorsari: and the hil Caucasus, they called Graucasus, that is to say, white with snow. The principal nations of Scythia, be the Saræ, Massagetæ, Dahæ, Essedones, Ariacæ, Rhymnici, Pesici, Amordi, Histi, Edones, Camæ, Camacæ, Euchatæ, Cotieri, Antariani, Pialæ, Arimaspi beforetime called Cacidiri, Afæi & Oetei. As for the Napæans & Apelæans who sometime dwelt there, they be vtterly extinct and gone. The riuers there of name be Mandagræus and Caspasius. And surely there is not a region where in Geographers doe varie

and disagree more thau in this: and as I take it, this commeth of the infinit number of those nations, wandring to & fro, and abiding neuer in one place. *Alexander* the Great and *M. Varro* make report, that the water of the Scythian sea is fresh in taste, & potable. And in truth *Pompey* the great had such water brought vnto him from thence to drink, when he waged war thereby against *Mithridates*: by reason no doubt of the great riuers that fall into it, which ouercome the saltnesse of the water. *Varro* saith moreouer, That during this expedition and iourny of *Pompeius*, it was for certain knowne, that it is but seuen daies iourney from out of India to the Bactrians countrey, euen as far as to the riuer Icarus which runneth into Oxus: and that the merchandise of India, transported by the Caspian sea, and so to the riuer Cyrus, may be brought in fiue daies by land as far as to Phasis in Pontus. Many Islands there lie all ouer that sea: but one aboue the rest, and most renowned, is Tazata; for thither all the shipping from out of the Caspian sea and the Scythian Ocean, do bend their course & there arriue; for that all the sea coasts do affront the Leuant, and turn into the East. The frontiers of Scythia from the first cape thereof is vnhabitable by reason of the snow that lies continually: neither are the next regions therto frequented and tilled, for the barbarous crueltie of those nations that border vpon it: such as the Anthropophagi, who liue of mans flesh, and haunt those parts. Hereupon it commeth, that you shall find nothing there but huge desart forests, with a number of wild beasts, lying in wait for men as sauage as themselues. When you are past this region, you enter againe amongst the Scythians, where you shal find likewise a wildernes ful of wild beasts, euen as far as to the promontory & mountain called Tabis, which regardeth the sea. In such sort as one moitie in manner of that coast, all along which looketh toward the East, lieth wast, and is not inhabited. The first people of any knowledge and acquaintance be the Seres, famous for the fine silk that their woods do yeeld. They kemb from the leaues of their trees the hoary downe thereof, and when it is steeped in water, they card and spin it, yea, and after their manner make therof a fey or web, whereupon the dames here with vs haue a double labour both of vndoing, and also of weauing again this kind of yearn. See what ado there is about it, what labour and toile it costeth, & how far fet it is; and all for this, that our ladies and wiues when they go abroad in the street may cast a lustre from them, and shine again in their silks and velucts. As for the Seres, a mild and gentle kind of people they are by nature: howbeit, in this one point they resemble the bruit and wild beasts, for that they cannot away in the commerce with other nations, with the fellowship and society of men, but shun and auoid their company, notwithstanding they desire to * traffick with them. The first riuer known among them is Psitaras: the next to it Carabi: the third Lanos: and then you come to a cape of that name. Beyond it is the gulfe Chryse, the riuer Attanos, and another bay or crecke called Attanos. By it lyeth the region of the Attaci, a kind of people, secluded from all noisome wind & aire, keeping vpon hils, exposed to the pleasant sunshine, where they inioy the same temperature of aire that the Hiperboreans liue in. Of this country and people, *Amometus* hath written a seuerall booke of purpose: like as *Heratæus* hath compiled such another treatise of the Hyperboreans. Beyond the Attaci or Attacores, the Thyrians and Tocharians do inhabit; yea, and the Casirians, who now by this time belong to the Indians, & are a part of them. But they within-forth that lie toward the Scithians, feed of mans flesh. As for the Nomades of India, they likewise wander to & fro, and keep no resting place. Some write, that they confine vpon the very Ciconians and Brysanians on the North side. But there (as all Geographers do agree) the mountains Emodi arise and shoot vp: and there entereth the country of the East Indians, and extendeth not only to that sea, but also to the Southerne, which we haue named the Indian sea. And this part of the Orientall Indians, which lieth directly streight forth, as far as to that place where India beginneth to twine and bend toward the Indian sea, containeth 1875 miles. And all that tract which windeth and turneth along the South, taketh 2475 miles (as *Eratosthenes* hath collected & set downe) euen vnto the riuer Indus, which is the vtmost limit of India West-ward. But many other writers haue set downe the whole length of India in this maner, namely, that it requireth 40 daies and nights sailing, with a good gale of a forewind: also, that from the North to the South coast thereof, is 2750 miles. Howbeit, *Agrippa* hath put down in writing that it is 3003 miles long, and 2003 broad. *Posidonius* took measure of it from the Northeast to the Southeast: & that by this means it is directly opposit vnto Gaule, which he likewise measured along the West coast, euen from the North west point where the Sun goeth down at Mid-summer, to the South-west where it setteth in the

* Euen at this day they set abroad their wares with the prices vpō the shore, and goe their waies: thē the frō marchants come and lay down the money, and haue away the merchandise: and so depart without any communication at all.

in the midst of Winter. He addeth moreouer and saith, That this West wind which from behind Gaule bloweth vpon India, is very healthsome & wholsome for that country, and this he proued by very good reason & demonstration: and verily the Indians haue a far different aspect of the sky from vs. Other starres rise in their Hemisphære, which we see not. Two Summers they haue in one yere, and as many haruests: and their winter between hath the Etesian winds blowing in our dog-daies, in stead of the Northern blasts with vs. The winds are kind and mild with them: the sea alwaies nauigable: the nations there dwelling, & the cities and towns there built, innumerable, if a man would take in hand to reckon them al, for India hath bin discouered, not only by *Alexander* the great his mighty and puissant army, and by other kings his successors (& namely *Seleucus* and *Antiochus*, and their Admirall *Patrocles*, who sailed about it euen to the Hircane and Caspian seas:) but also by diuers other Greek Authors, who making abode, & sojourning with the kings of India (like as *Megasthenes* and *Dionysius* sent thither of purpose from Philadelphus) haue made relation of the forces which those nations are able to raise and maintain. And yet further diligence is to be imploied still in this behalfe, considering they wrote of things there so diuers one from another, and incredible withall. They that accompanied *Alexander* the great in his Indian voiage, haue testified in their writings, that in one quarter of India which he conquered, there were of towns 500 in number, and not one lesse than the city Cos: of seuerall nations nine. Also that India was a third part of the whole earth: & the same so wel inhabited, that the people in it were innumerable. And this they said (beleeue mee) not without good apparance of reason; for the Indians were in manner the onely men of all others that neuer went out of their own country. Moreouer, it is said, That from the time of *Bacchus* vnto *Alexander* the Great, there reigned ouer them successiuely 154 kings, for the space of 5402 yeres between, and 3 moneths ouer. As for the riuers in that country, they be of a wonderfull bignes. And reported it is, that *Alexander* failed euery day at the least 600 stadia vpon the riuer Indus, and yet in lesse than fiue moneths and some few daies ouer, he could not come vnto the end of that riuer; and lesse it is than Ganges by the confession of all men. Furthermore, *Seneca* a Latine writer, assaied to write certain commentaries of India: wherein he hath made report of 60 Riuers therein, and of nations 120 lacking twaine. As great a labour it were to reckon vp & number the mountains that be in it. As for the hils Imaus, Emodisus, Paropamisus, as parts all and members of Caucasus, but one vpon another, and conioine together. And being past them yee go downe into a mighty large plain country, like to Ægypt. It remaineth now to shew the continent and firm land of this great country, and for the more euident demonstration, let vs follow the steps of *Alexander* the great, and his Historiographers. *Diogneus* and *Beton*, who set down all the geasts and iournies of that prince, haue left in writing, That from the Caspian ports vnto the city Hecatompylos which is in Parthia, there are as many miles as we haue set down already. From thence to Alexandria in the Ariane country (which city the same king founded) 562 miles: from whence to Prophthasia in the Dranganes land, 199 miles: & so forward to the capitoll towne of the Arachosians, 515 miles. From thence to Orthospanum, 250 miles: last of all, from it to the city of Alexandria in Opianum, 50 miles. In some copies these numbers are found to vary and differ. But to return to this forefaid city, scituat it is at the very foot of Caucasus. From which to the riuer Chepta and Pencolaitis, a town of the Indians, are counted 227 miles. From thence to the riuer Indus & the towne Tapila, 60 miles: and so onward to the noble and famous riuer Hidaspes, 120 miles: from which to Hypasis, a riuer of no lesse account than the other, 4900, or 3900. And there an end of *Alexanders* voiage: howbeit, he passed ouer the riuer, and on the other side of the bank, he erected certaine altars and pillers, and there dedicated them. The letters also of the king himselfe, sent back into Greece, do cary the like certificate of his iournies, and agree iust herewith. The other parts of the country were discouered & surueied by *Seleucus Nicator*, namely from thence to Hesudrus 168 miles: to the riuer Ioames as much: & some copies adde 5 miles more therto: from thence to Ganges 112 miles: to Rhodapha 119, & some say, that between them two it is no lesse than 325 miles. From it to Calinipaxa, a great town, 167 miles & an half: others say, 265. And so the confluent of the riuers Iomanes & Ganges, where both meet together, 225 miles, & many put therto 13 miles more: from thence to the town Palibotta 425 miles: & so to the mouth of Ganges where he falleth into the sea, 638 miles. As for the nations, which it pains me not to name, from the mountains Emodi, & the principal cape of them, Imaus, which signifies in that country, language ful of snow, they

be these: the Isari, Cosyri, Izgi, and vpon the very mountains, the Ghisiotosagi: also the Brachmanæ, a name common to many nations, among whom are the Maccocalingæ. Of riuers besides, there are Pinnas & Cainas, the later of which twain runneth into Ganges, & both are nauigable. The people called Calingæ, coast hard vpon the sea. But the Mandei & Malli, among whom is the mountain Mallus, are aboue them higher in the country. And to conclude, then you come to Ganges, the farthest bound and point of all that tract, India.

Chap. XVIII.

¶ *The riuer Ganges.*

MAny haue bin of opinion, & so haue written, that the spring of Ganges is vncertain, like as that also of Nilus: and that he swelleth, ouerfloweth, and watereth all the countries whereby he passeth, in the same sort that Nilus doth. Others again haue said that it issueth out of the mountains of Scythia: & how into it there run 19 other great riuers: of which ouer and aboue those beforenamed, certain are nauigable; namely, Canucha, Vama, Erranoboa, Cosagus, and Sonus. There be also that report, that Ganges presently ariseth to a great bigneſse of his owne sources and springs, and so breaketh forth with great noise and violence, as running downe with a fal ouer craggy and stony rocks: and when he is once come into the flat plains and euen country, that he taketh vp his lodging in a certain lake; and then out of it carrieth a mild and gentle stream, 8 miles broad where it is narrowest; and 100 stadia ouer for the most part, but 160 where he is largest: but in no place vnder 20 paces deep, [*i.* a 100 foot.]

Chap. XIX.

¶ *The nation of India, beyond the riuer Nilus.*

WHen ye are ouer Ganges, the first region vpon the coast that you set foot into, is that of the Gandaridæ and the Calingæ, called Parthalis. The king of this countrey hath in ordinance for his wars 80000 foot, 1000 horse, and 700 Elephants, ready vpon an houres warning to march. As for the other nations of the Indians that liue in the champion plaine countries, there be diuers states of them, of more ciuility than the mountainers. Some apply themselues to tillage and husbandry: others set their minds vpon martiall feats: one sort of them practise merchants trade, transporting their owne commodities into other countries, and bringing in forrein merchandise into their own. As for the nobility and gentry, those also that are the richest and mightiest among them, they manage the affaires of State and Commonweale, and sit in place of justice, or els follow the court, and sit in counsell with the king. A fit estate there is besides in great request, & namely of Philosophers & Religions, giuen wholly to the study of wisdom & learning; and these make profession of voluntary death: and verily when they are disposed to die at any time, they make a great funerall fire, cast themselues into it, and so end their daies. Besides all these, one thing there is among them halfe brutish, and of exceeding toile and trauell (and yet it is that which partly maintaineth all the other estates aboue said) namely, the practise of hunting, chasing and taming Elephants. And in very truth, with them they plow their ground, vpon them they ride vp & down: with these beasts are they best acquainted; they serue in the wars for maintenance of their liberty, and defence of their frontiers against all inuasion of enemies. In the choise of them for war-seruice, they regard and consider their strength, their age, and bigneſse of body. But to leaue them. An Iland there is within the riuer Ganges, between two arms thereof, of great largeneſse and capacity, which receiueth one nation by it selfe, apart from others, & named it is Modogalica. Beyond it are seated the Modubians and Molindians, where standeth the stately city Molinda, scituat in a plentiful and rich soile. Moreouer, the Galmodroesians, Pretians, Calisse, Sasuri, Fassalæ, Colubæ, Orxulæ, Abali, and Taluctæ. The king of these countries hath in ordinary for his wars 50000 foot, 3000 horse, and 400 Elephants. Then you enter into a country of a more puissant & valiant nation, to wit, the Andarians, planted with many villages well peopled: and moreouer with 30 great townes, fortified with strong walls, towers, and bastiles. These find and maintain prest & ready to serue the king in his wars, an Infantery of 100000 foot, a Cauallery of 2000 horse, and 100 Elephants besides, wel appointed. Of all the regions of India, the Dardanian country is

is most rich in gold mines, and the Selian in siluer. But aboue all the nations of India thorowout, and not of this tract and quarter only, the Prasij far exceed in puissance, wealth, and reputation; where the most famous, rich, and magnificent city Palibotria stands, whereof some haue named the people about it, yea and all the nation generally beyond Ganges, Palibotrians: their king keeps continually in pay 600000 foot men, and 30000 horsemen, and 9000 Elephants euery day in the yere, whereby you may soon guesse the mighty power & wealth of this prince. Beyond Palibotria, more within the firme land, inhabit the Monedes and Suari, where standeth the mountain Maleus: and there for six moneths space the shadowes in winter time fal Northward; and in summer season go into the South. The pole Arcticke starres in all that tract are seen but once in the yere, and that no longer than for 15 daies, as *Beton* reporteth. But *Megasthenes* writeth, that this is vsuall in other parts of India. The Antarctique or South pole the Indians call Dromosa. As for the riuer Iomanes, which runs into Ganges, it trauerseth through the Palibotrians country, and passeth between the townes Methora and Cyrisoborea. Beyond the riuer Ganges, in that quarter and clymate which lieth Southward, the people are caught with the Sun, and begin to be blackish, but yet not all out so sun-burnt and blacke indeed as the Æthyopians and Moores. And it seemeth, that the neerer they approch to the riuer Indus, the deeper coloured they are and tanned with the Sun: for you are not so soone past the Prasians country, but presently you are vpon Indus: and among the mountaines of this tract, the Pygmæans, by report, do keepe. *Artemidorus* writeth, that betweene these two riuers there is a distance of 21 miles.

Chap. XX.

¶ *The riuer Indus.*

THe great riuer Indus, which the native people call Sandus, issueth out of a part or dependance of the hill Caucasus, which is called Paropamisus: hee takes his course and runs full against the Sun rising, and makes 19 riuers more to lose their names, which he takes in vnto him: among which the principall are these, Hydaspis one, bringing with him 4 more: and Cantabra another, accompanied with 3 besides. Moreouer, of such as are of themselues nauigable, without the help of others, Acesines, and Hypasis. And yet for all their additions, the riuer of Indus (such a sober and modest course as it were his waters keepe) is in no place either aboue 50 stadia ouer, or 15 paces, *i.* 75 foot, or 12 fathom and halfe deep. This riuer inclooseth within two branches of it, a right great Island named Prasiane, and another that is lesse, called Patale. As for himselfe, they that haue written the least of him say he beareth vessels for 1240 miles: and turning with the course of the Sun, keepeth him company Westward vntill hee is discharged into the Ocean. The measure of the sea coast from Ganges vnto him I wil expresse generally and in grosse, as I find it written, albeit there is no agreement at all of Authors touching this point. From the mouth of Ganges where he entreth into the sea, vnto the cape Calingon and the towne Dandagula, are counted 725 miles: from thence to Tropina 1225 miles. Then to the promontorie Perimula, where stands the chiefe mart or towne of merchandise in all India, they reckon 750 miles: from which to the towne aboue-said Patale within the Isle, 620 miles. The mountainers inhabiting betwixt it and Iomanes, are the Cesti and Celiboni, wilde and sauage people: next to them the Megallæ, whose king hath in ordinary prest for seruice 500 Elephants, of foot and horse a great number, but vncertaine it is how many, sometime more, sometime fewer. As for the Chryseans, Parasangians, and Asangians, they are full of the wilde and cruell Tygers: they are able to arme 30000 foot and 800 horse, and to set out with furniture 300 Elephants. This country is on three sides enuironed and inclosed with a raunge of high mountaines, all desart and full of wildernesse for 625 miles, and of one side confined with the riuer Indus. Beneath those wilde hills you enter among the Dari & Suræthen you come againe to waste desarts for 188 miles, compassed about for the most part with great bars and banks of sand, like as the Islands with the sea. Vnder these desart forrests you shall meet with the Maltecores, Cingians, Marobians, Rarungians, Moruntes, Masuæ, and Pangungæ. Now for those who inhabit the mountains, which in a continuall raunge without interruption stand vpon the coasts of the Ocean, they are free States and subiect to no Prince, and many fair townes and cities they hold among these cliffes and craggy hills. Then come you to the Nareans,

ræans, incloſed within the higheſt mountaine of all the Indian hills, Capitalia. On the other ſide of this mountaine great ſtore there is all ouer it, of gold and ſiluer mines, wherein the Inhabitants do dig. Then you enter vpon the kingdom of Oratura, whoſe king indeed hath but ten Elephants in all, howbeit a great power of footmen. And ſo forward to the Varetates, who vnder their King keepe no Elephants at all for his ſeruice, truſting vpon their Cauallery and Fanterie, wherein they are ſtrong. Next to them the Odomboerians & Salabaſtres, where ſtanderh a goodly faire city called Horata, enuironed and fortified with deepe foſſes and ditches full of ſtanding water: wherein there keepe a great number of Crocodiles, which for the greedy appetite to deuoure mens bodies, wil ſuffer none to paſſe into the town but ouer the bridge. Another towne there is beſides among them, of great name and importance, to wit, Automela, ſtanding vpon the ſea ſide: and otherwiſe much reſort there is vnto it of merchants from all parts, by reaſon of 5 great riuers which meet all there in one confluence. Their king maintains in ordinary 1600 Elephants, 150000 footmen, and 5000 horſe. The king of the Charmians is but poore to ſpeake of: his ſtrength lieth in 60 Elephants, for his power otherwiſe is but ſmal. Being paſt that realme, you come into the country of the Padians, the only nation of all the Indians, which is gouerned by women. One of this ſex, they ſay, was begotten ſomtime by *Hercules*, in which regard ſhe was the better accepted, and had the prerogatiue of the regencie ouer the greateſt kingdome. From her the other Queens fetch their pedegree, and haue the dominion and rule ouer 30 great townes, and the command of 150000 foot, and 500 Elephants. Beyond this realme you come to the nation of the Syrieni, containing 300 Cities: and from them to the Deraugæ, Poſunge, Bugæ, Gogyarei, Vmbræ, Nereæ, Brancoſi, Nobundæ, Cocondæ, Neſei, Pedatritæ, Solobriaſæ, and Oloſtræ, who confine vpon the Iſland * Patale: from the vtmoſt point of which Ihand vnto the gates Caſpiæ, are reckoned 18025 miles. Now on this ſide the riuer Indus, iuſt againſt them, as appeareth by euident demonſtration, there dwell the Amatæ, Bolingæ, Gallitalutæ, Dimuri, Megari, Ordabæ, and Meſæ. Beyond them the Vri and Sileni, and then you come to the deſarts for 250 miles: which hauing paſſed ouer, you ſhall meet with the Organages, the Abaorts, Cibaræ, and the Suertæ: and beyond theſe, a wildernes againe as great as the former. Paſſe on farther, you come among the Sarophages, Sorgæ, Baraomatæ, and the Gunbretes, of whom there be 13 ſeuerall nations, and each one hath two great cities apiece. As for the Aſeni, they people three cities: their capitall city is Bucephala, built in the very place where king *Alexanders* horſe called *Bucephalus* was interred. Aboue them are the mountainers on the riſing of the hill Caucaſus, named Soleadæ, and Sondræ: and when you are on the other ſide of the riuer Indus, as you go along the coaſt and banks thereof, you ſhall ſee the Samarabrians, the Sambrucenes, the Briſabrites, Oſij, Autixeni, and Taxillæ, with a famous city called Amandra, of which all that traſt now lying more flat and plaine within the countrey is named Amandria. Foure other nations there be beſides of Indians, the Peucolaitæ, Arſagalites, Geretes, and Aſei: for many of the Geographers ſet not down Indus the riuer, for to determine the marches of the Indians Weſtward; but lay thereto foure other prouinces and ſeuerall ſeigniories, to wit, of the Gedroſians, Arachotes, Arij, and Paropamiſades.

* Babul.

Chap. XXI.

¶ *The Arij, and other nations depending vnto them.*

Other writers are of opinion, that the vtmoſt frontier and limit of India is the riuer Cophetes, and both it and all thoſe quarters are included within the territorie of the Arij; yea and moſt of them affirme, that the city Nyſa, as alſo the mountaine Merus conſecrated to god *Bacchus*, belong vnto India as parcels thereof. This is that mountaine whereof aroſe the poeticall fable, That *Bacchus* therein was borne, and iſſued out of *Iupiters* thigh. Likewiſe they aſſigne and lay to India the country of the Aſpagores, ſo full of vines, laurel, and box, and generally of all ſorts of apple trees and other fruit full trees that grow within Greece. Many ſtrange, wonderfull, and in manner fabulous things they report of the fertilitie of that land, of the diuers ſorts of corne, of trees bearing cotton, of wilde beaſts, of birds, and other creatures there breeding and liuing: which becauſe they are not properly belonging to this Treatiſe now in hand, I will reſerue them for another part of this Worke, and write more particularly

larly of them in their due and ſeuerall places. And as for thoſe 4 prouinces which I touched before, I will ſpeake of them anon: for now I haſten and thinke it long vntill I haue ſaid ſomewhat of the Iſland Taprobane. And yet before I come to it there be other Iſles which I cannot paſſe by, and namely that of Patala, which I noted to ly in the very mouth of the riuer Indus, and it carrieth the forme and ſhape of a triangle figure, and is 220 miles long. Without the mouth of the riuer Indus two other Iſles there be, Chryſe and Agyræ, ſo named (as I think) of the gold and ſiluer mines which they do yeeld: for I cannot eaſily beleeue, that the very earth and ſoile there is all gold and ſiluer entire, as ſome haue made report. Twenty miles from them lieth the Iſle Crocala: and 12 miles farther into the ſea, Bibaga, where of oiſters and other ſhel fiſhes called Purples are found good ſtore. And laſt of all, 9 miles beyond it, Toralliba ſhewes it ſelfe, and many other petty Iſlands of no regard.

Chap. XXII.

¶ *The Iſland Taprobane.*

It hath beene of long time thought by men in antient daies, That Taprobane was a ſecond world, in ſuch ſort as many haue taken it to be the place of the Antipodes, calling it the Antichthones world. But after the time of *Alexander* the Great, and the voiage of his army into thoſe parts, it was diſcouered and knowne for a truth, both that it was an Iſland, and what compaſſe it bare. *Oneſicratus* the Admiral of his fleet hath written, that the Elephants bred in this Iſland be bigger, more fierce and furious for war ſeruice than thoſe of *India*. *Megaſthenes* ſaith there is a great riuer which parteth it in twaine, and that the people thereof dwelling along the riuer be called Palæogoni: adding moreouer, that it affordeth more gold and bigger pearles by farre than India doth. *Eratoſthenes* alſo tooke the meaſure thereof, and ſaith, that in length it beareth 7000 ſtadia, and in bredth 5000: that in it there be no cities or great towns, but villages to the number of 700. It begins at the Levant ſea of Oriental Indians, from which it ſtretcheth and extendeth between the Eaſt and Weſt of India; and was taken in times paſt to ly out into the ſea from the Praſians countrey 20 daies ſailing. But afterwards, for that the boats and veſſels vſed vpon this ſea in the paſſage thither, were made & wound of paper reeds like thoſe of the riuer Nilus, and furniſhed with the ſame kinde of tackling, the voiage thither from the foreſaid country was gaged within a leſſe time: and well knowne it was, that according to the ſaile of our ſhips and gallies, a man might arriue there in 7 daies. All the ſea lying between is very ebbe, full of ſhallowes and ſhelues, no more than 5 fathom deepe: howbeit in certain chanels that it hath, it is ſo deep that it canot be founded, neither wil any anchors reach the bottom, and there reſt; and withall, ſo ſtreight & narrow theſe chanels are, that a ſhip cannot turne within them: and therefore to auoid the neceſſitie of turning about in theſe ſeas, the ſhips haue prows at both ends, and are pointed each way: in ſailing they obſerue no ſtar at all. As for the North pole, they neuer ſee it: but they carry euer with them certaine birds in their ſhips, which they ſend out oft times when they ſeeke for land, euer obſeruing their flight: for knowing well that they wil fly to land, they accompany them, bending their courſe accordingly: neither vſe they to ſaile more than one quarter of a yeare: and for 100 daies after the Sun is entred into Cancer, they take moſt heed, and neuer make ſaile: for during that time it is winter with them. And thus much we come to knowledge of, by relation of antient Writers. But we came to far better intelligence, and more notable information, by certain Embaſſadors that came out of that Iſland, in the time of *Claudius Cæſar* the Emperor: which happened vpon this occaſion, and after this manner; It fortuned that a free ſlaue of *Annius Plocamus*, (who had farmed of the Exchequer the cuſtoms for impoſt of the red ſea) as he made ſaile about the coaſts of Arabia, was in ſuch wiſe driuen by the North windes beſides the realme of Carmania, and that for the ſpace of 15 daies, that in the end he fell with an harbour thereof called Hippuros, and there arriued. When he was ſet on land, he found the King of that Countrey ſo curteous that hee gaue him entertainment for ſix moneths, and entreated him with all kindeneſſe that could be deuiſed. And as he vſed to diſcourſe and queſtion with him about the Romanes and their Emperour, he recounted vnto him at large of all things. But amongſt many other reports that he heard he wondred moſt of all at their iuſtice in all their dealings, & was much in loue therewith, and namely, that their Deniers of the money which was taken, were alwaies of like

like weight, notwithstanding that the sundry stamps and images vpon the pieces shewed plainly that they were made by diuers persons. And hereupon especially was he mooued & solicited to seeke for the alliance and amitie of the people of Rome: and so dispatched 4 Embassadours of purpose, of whom one *Rachias* was the chiefe and principall personage. By these Embassadours we are informed of the state of that Island, namely, that it contained fiue hundred great townes in it: & that there was a hauen therin regarding the South coast, lying hard vnder Palesimundum the principall citie of all that realme, and the kings seat and pallace: that there were by iust account 200000 of commoners & citizens: moreouer, that within this island there was a lake 270 miles in circuit, containing in it certain Islands good for nothing else but pasturage, wherein they were fruitfull; out of which lake there issued 2 riuers, the one, Palesimundas, passing neere to the citie abouesaid of that name, and running into the hauen with three streames, whereof the narrowest is fiue stadia broad, and the largest 15; the other Northward on India side, named Cydara: also that the next cape of this country to India is called Colaicum, from which to the neerest port of India is counted foure daies sailing: in the midst of which passage, there lieth in the way, the Island of the Sunne. They said moreouer, that the water of this sea was all of a deepe greene colour; and more than that, full of trees growing within it: insomuch as the pilots with their helmes many times brake off the heads and tops of those trees. The stars about the North-pole, called Septentriones, the Waines or Beares, they wondred to see here among vs in our Hemisphere: as also the Brood-hen, called *Vergiliæ* in Latine, as if it had been another heauen. They confessed also they neuer saw with them, the Moone aboue the ground before it was 8 daies old, nor after the 16 day. That the Canopus, a goodly great and bright star about the pole Antarcticke, vsed to shine all night with them. But the thing that they marueiled and were most astonied at was this, that they obserued the shadow of their own bodies fell to our Hemisphere, and not to theirs; and that the Sun arose on their left hand, and set on their right, rather than contrariwise. Furthermore they related, that the front of that Island of theirs which looked toward India, contained 10000 stadia, & reached from the South-East beyond the mountains Enodi. Also, that the Seres were within their kenning, whom they might easily discouer from out of this their Island; with whom they had acquaintance by the meanes of trafficke and merchandise: and that *Rachias* his father vsed many times to trauell thither. Affirming moreouer, that if any strangers came thither, they were encountred and assailed by wild & sauage beasts: and that the inhabitants themselues were gyants of stature, exceeding the ordinary stature of men, hauing red haire, eies of colour blewish, their voice far sound horrible, for speech not distinct nor intelligible for any vse of traffick and commerce. In all things else their practise is the same that our merchants and occupiers do vse: for on the farther side of the riuer, when wares and commodities are laid downe, if they list to make exchange they haue them away, and leaue other merchandise in lieu thereof to content the forrein merchant. And verily no greater cause haue we otherwise to hate & abhor this exceeding superfluitie, than to cast our eie so far and consider with our selues, what it is that we seeke for, from what remote partswe fetch it, and to what end we so much desire al this vanitie. But euen this Iland Taprobane, as farre off as it is, seeming as it were cast out of the way by Nature, and diuided fro m all this world wherein we liue, is not without those vices and imperfections wherwith we are tainted and infected. For euen gold & siluer also is there in great requestand highly esteemed: and marble, especially if it be fashioned like a tortois shell. Iemmes and pretious stones; pearles also, such as be orient and of the better sort, are highly prised with them: and herein consisteth the very height of our superfluous delights. Moreouer, these Embassadors would say, that they had more riches in their Island, than we at Rome, but we more vse thereof than they. They affirmed also, that no man with them had any slaues to command: neither slept they in the morning after day-light, ne yet at all in the day time. That the maner of building their houses was low, somewhat raised aboue the ground, and no more adoe: that their markets were neuer deare, nor price of victuals raised. As for courts, pleading of causes, and going to law, they knew not what it meant. *Hercules* was the onely god whom they worshipped. Their king was alwaies chosen by the voices of the people: wherein they had these regards; that hee were aged, milde, and childlesse: but in case he should beget children afterward, then hee was deposed from his regall dignitie, to the end that the kingdome should not in processe of time bee hereditary and held by succession, but by election onely. This king being thus chosen and inuested,

inuested, hath thirtie other gouernours assigned vnto him by the people: neither can any person be condemned to death, vnlesse he be cast by the more part of them, and pluralitie of voices: and thus condemned as he is, yet may he appeale vnto the people. Then are there 70 judges deputed to sit vpon his cause: and if it happen that they assoile and quit this party condemned: then those 30 who condemned him, are displaced from their state and dignity, with a most bitter and sharpe rebuke, and for euer after, as disgraced persons liue in shame and infamie. As for the king, arraied he is in aparrell as prince *Bacchus* went in old time: but the subiects and common people are clad in the habit of Arabians. If it fortune that the king offend, death is his punishment: howbeit, no man taketh in hand to doe execution. All men turne away their faces from him, and deigne him not a looke nor a word. But to do him to death in the end, they appoint a solemne day of hunting, right pleasant and agreeable vnto Tygres and Elephants, before which beasts they expose their king, and so he is presently by them deuoured. Moreouer, in that Island good husbands they are for their ground, and till the same most diligently. Vines haue they no vse of at all: for all sorts of fruits otherwise they haue abundance. They take also a great pleasure and delight in fishing, and especially in taking of tortoisses: and so great they are found there, that one of their shels will serue to couer an house: and so the inhabitants doe imploy them in stead of roufes. They count an hundred yeeres no long life there: that is theordinary time of their age. Thus much we haue learned and knowne as touching Taprobane. It remaineth now to say somewhat of those foure Satrapies or prouinces, which we did put off vnto this place. Of them therefore as followeth.

Chap. XXIII.

¶ *Capissene, Carmania.*

Beyond those nations that confine hard vpon the riuer Indus, as yee turn toward the mountaines, yee enter vpon the realme of Capissæne, wherein sometime stood the citie Capissa, which *Cyrus* the king caused to be rased. At this day there standeth the citie Arachosia, with a riuer also of that name in the country Arachosia: which citie some haue called Cophe, founded by queene *Semiramis*. There likewise is to be seen the riuer Hermandus, which runneth by Abeste, a city of the Aracosians. The next that confront Aracosia Southward, toward part of the Arachotes, are the Gedrosi: and on the Northside, the Paropamisades. As for the towne Cartana, named afterwards Tetragonius, scituate it is at the foot of the mountaine Caucasus. This country lies ouer-against the Bactrians: then you come to the principall towne therof Alexandria, named so of king *Alexander* the founder thereof: vpon the marches whereof are the Syndrari, Dangulæ, Porapiani, Cantaces, and Maci. Moreouer, vpon the hill Caucasus standeth the towne Cadrusi, built likewise by the said *Alexander*. On this side all these regions lieth the coast of the riuer Indus. Then followes the region of the Arianes, all scorched and senged with the parching heate of the Sunne, and inuironed about with desarts: howbeit, many shadowie vallies lie betweene to allay the exceeding heat. Well peopled it is about the two riuers especially, Tonderos and Arosapes. Therein stands the citie Artaccana. Being past it, the riuer Arius runneth vnder the city Alexandria, built by *Alexander* the Great. The towne containes in compasse 30 stadia. Then come you to Artacabane, a citie as it is much more ancient, so it is also fairer by far, which by *Antiochus* the king was walled the second time, and enlarged to 50 stadia. The next in order is the nation of the Dorisci. The riuers Pharnacotis and Ophradus. Prophtasia, a towne in Zarasparia. The Drangæ, Argetæ, Zarangæ, and Gedrusij. Townes moreouer, Peucolais and Lymphorta. After you are past their territory, you enter into the desarts of the Mithoricanes, and so to the riuer Mauain, and the nation of the Augutturi. The riuer Borru, the people called Vrbi, the nauigable riuer Ponamus, which passeth through the marches of the Pandanes. Ouer and besides, the riuer Ceberon within the country of the Sorates, which in the mouth thereof where it falleth into the sea, makes many baies and harbours. As you go farther, you come vpon the towne Candigramma, with the riuer Cophes: into which there runne other riuers that carry vessels, to wit, Sadarus, Parasp us, and Sodinus. As for the country Daritus, some would haue it to be a part of Ariana, and they set down the measure of them both together to be in length 1950 miles, & in breadth lesse by half than India. Others haue set down that the country of the Gedrusians and Scyrians may contain 183 miles. Being passed which

quarters,

quarters, you enter into the region of the Ichthyophagi, surnamed Oritæ or mountainers (who haue a proper language by themselues, and speake not in the Indian tongue) which reaches on full for 200 miles. And beyond it you meet with the people of the Arbians, who likewise continue for other 200 miles. As for those Ichthyophagi before-named, *Alexander* by an expresse edict forbad them all to feed on fish. Being past them, you are in the desarts: and beyond them you come into Carmania, Persis, and Arabia. But before that we treat distinctly of these countries, I thinke it meet to set downe what *Onesicritus* (who hauing the conduct of a fleet vnder *Alexander* the great, sailed from off India, about the Southerly coasts of Persis) reports according to those intelligences which came lately from king *Iuba*. In like maner those voiages of ours for these yeeres past, performed, by which euen at this day we are guided. Howbeit, in the reports made by *Onesicritus* and *Nearchus*, of their nauigations, we finde neither the distance, ne yet the names of the seueral resting places, after euery daies iournie. And to begin with the citie Xylenopolis built by *Alexander*, from which they entred first into their voiage, it is not put down by them, either in what place it is scituate, nor vpon what riuer. Yet these particulars following are by them reported worth remembrance: to wit, that in this voyage *Nearchus* founded a towne in those parts: that the riuer Nabrus runs thereby, and is able to beare great vessels: ouer-against which there is an Iland 70 stadia within the sea. Moreouer, that *Leonatus* caused Alexandria to be built in the frontiers of that region, by direction and commandement from king *Alexander*, where the riuer Argenus enters into the sea, and yeelds a safe & commodious hauen. Also that the riuer Tuberum is nauigable, along the bankes whereof the Parites inhabit. And after them the Ichthyophagi, who tooke vp so long a tract, that they were 20 daies sailing by their coasts. They make relation likewise of the Isle of the Sun, named also the couch or bed of the nimphs: This Iland is red all ouer, and no liuing creature will liue therin, but is consumed, & perishes no man knoweth how, or vpon what cause. They speake besides of the nation of the Orians: as also of Hytanis a riuer in Carmania, which affordeth many baies and harbours, yea, and plentie of gold in the grauell and sand therof. And here was the first place wherin they obserued, that they had a sight of the North-pole star. As for the starre *Arcturus*, they affirmed, that they saw it not euery night, nor at any time all night long. Furthermore, that the country of the Achæmenides in Persea, reached thus farre. Ouer and besides, that as they trauelled, ordinarily they found good store of mines, wherein was digged for brasse, yron, Arsenicke or Sardaracha and Vermilion. And then they came to the cape of Carmania: from which to the coast ouer-against them of the Maræ, a people in Arabia, the cut ouer sea is 50 miles. Vpon these coasts they discouered 3 Ilands, whereof Organa onely is inhabited, by reason of fresh water within it, and from the continent it lieth about 25 miles. And foure Ilands more they fell vpon, euen in the Persian gulf ouer-against Persia. And about these Ilands they might se sea-adders & Serpents so monstruous great that as they came swimming toward them, they put the very fleet in great fright, for there were among them some, 20 cubits long. Beyond it they met with the Iland Acrotadus: likewise the Gaurates Isles, wherein the nation the Chiani doe inhabit. About the middle of this gulfe or arme of the sea, the riuer Hiperus hath his course, able to beare great hulkes and ships of burden. Also the riuer Sitiogagus, vpon which a man may passe in 7 daies to Pasargadia. Also a riuer that is nauigable called Phirstimus, and an Iland within it, but it is nameless. As for the riuer Granius which runs through Susiane, it carries but small vessels. Along the coast on the right hand of this riuer dwell the Deximontanes, who dresse and prepare Bitumen. Then the come to the riuer Oroatus, with a dangerous hauen or mouth where it falls into the sea, vnlesse a man be guided by skilfull pilots: & full against this riuer there are discouered 2 little Islands. Past which, the sea is very low and shallow, full of shelues and sands, more like a meere and marish water, than a sea. Howbeit there be certaine trenches or channels in it that draw deepe water, wherein they may without danger saile. Then met they with the mouth of the riuer Euphrates. Also the lake which the two riuers Eulæus and Tigris doe make, neere vnto Characum. And so from thence they arriued vpon the riuer Tigris, at Susa. And there an end of the nauigation performed by *Onesicritus* and *Nearchus*. For after they had beene three months embarked and in their voiage vpon the sea, they found *Alexander* at Susa (where he feasted and made solemne bankets) and that was 7 monthes after he parted from them at Patalæ. And thus much concerning the voiage of *Alexander* his fleet. Now afterwards from Syagrus, a Promontory in Arabia, it was counted vnto Patale 1332 miles, & held it was for certain then that,

that the West wind with the people of that country call Hypalus, was thought most proper for to make saile to the same place. Howbeit the age ensuing discouered a shorter and safer cut, namely, if from the said promontorie or cape Syagrus, they set their course directly to the mouth of the riuer Zizerus, which maketh an harborough in India. And in truth this passage held a long time, vntill such time that in the end the merchants found out a more compendious and shorter course, and gained by their voiage to India: for euery yeere now they saile thither, and for feare of pirats and rouers that were wont very much to infest and annoy them, they vsed to embarke in their ships certaine companies of Archers. And seeing that all these seas are now discouered, and neuer before so certainly, I will not thinke much of my pains, to declare and shew, the whole course of our Indian voiages from out of Ægypt. And first and formost this is a thing worthy to be noted and obserued of euery man, that there is not a yeere goeth ouer our heads, but it costs our State to furnish a voiage into India, 500 hundred thousand Sesterces, *i.* fifty millions of Sesterces. For which the Indians sendeth backe againe commodities and merchandise of their owne, which being at Rome, are sold for an hundred times as much as they cost, or yeeld in the price an hundred fold gain. But to returne againe to our voiage, from Alexandria in Ægypt, it is two miles to Iuliopolis: from whence vpon the riuer of Nilus, they saile 303 miles to Coptus, which may be done in 12 daies space, hauing the Etesian winds at the poupe. From Coptus they trauell forwards vpon Cammels backs: and for great default of water in those parts, there be certain set places for bait, lodging, and watering: The first is called Hydreuma 32 miles from Coptus. The second one days iourney from thence in a certaine mountaine. The third watering place at another Hydreuma, 95 miles from Coptus. The fourth againe in a second mountaine. The fifth is at a third Hydreuma of *Apollo*, from Coptus 184 miles. Beyond which, the resting place is vpon another hill. And then to Hydreuma the new, from Coptus 234 miles. Another water towne there is, called Hydreuma the old, named also Trogloditicum, where two miles out of the port way lieth a garrison, keeping watch and ward both day & night: and foure miles distant it is from new Hydreuma. From whence they trauell to the towne Berenice, an hauen towne standing vpon the red sea, 258 miles from Coptus. But for as much as the journey all this way is for the most part performed in the night season, by reason of the excessiue heat, & the trauellers are forced to rest all the day long, therefore twelue daies are set down for the whole voiage between Coptus and Berenice. The time then that they vsually begin to set saile, is about Midsummer before the dog daies, or presently vpon the rising of the dog starre. And about the 30 daies end they arriue to Ocelis in Arabia, or els at Cama, within Saba, the countrey of incense. A third port there is besides called Muza, vnto which there is no resort of merchants out of India: neither is it in request but with merchants that aduenture only for incense, drugs, & spices of Arabia. Howbeit peopled this country is within-forth, and hath diuers great townes. Of which, Saphar is the principall, and the kings seat: & another besides of good importance called Sabe. But for them that would make a voiage to the Indians, the most commodious place to set forward is Ocelis: for from thence, and with the West wind called Hypalus, they haue a passage of forty daies sailing to the first towne of merchandise in India, called Muziris. Howbeit a port this is, not greatly in request, for the daunger of pirates and rouers, which keep ordinarily about a place called Hydræ: and besides that, it is not richly stored and furnished with merchandise. And more than so, the harborough is farre from the town, so as they must charge and discharge their wares to and fro in little boats. At the time when I wrot this story, the king that reigned there, was named *Celebothras*. But another hauen there is more commodious, belonging to the Necanidians, which they cal Becare: the kings name at this present is *Pandion*: not far off is another town of merchandise within the firme land, called Madusa. As for that region, from whence they transport pepper, in small punts or troughes made of one peece of wood, it is named Corona. And yet of all these nations, hauens, and towns, there is not a name found in any of the former writers. By which it appeareth, that there hath been great change and alteration in these places. But to come again to India, our merchants returne from thence back in the beginning of our month December, which the Ægiptians cal Tybis, or at farthest before the sixt day of the Ægyptians month Machiris, and that is before the Ides of Ianuary: and by this reckoning they may passe to and fro, and make return within the compasse of one yere. Now when they saile from India, they haue the Northeast wind Vulturnus with them: and when they be entered once into the red sea, the

So as it appeareth that euery dais journy was aboue 32 miles.

South or Southweſt. Now wil we return to our purpoſed diſcourſe as touching Carmania. The coaſt wherof after the reckoning of *Niccarchus* may take in circuit 12050 miles. From the firſt marches thereof to the riuer Sabis is counted 100 miles. From whence all the way as far as to the riuer Andaius, the country is rich and plenteous, for in it are vineyards and corne fields wel husbanded. This whole tract is called Amuzia. The chiefe townes of Carmania be Zetis and Alexandria. Vpon the marches of this realme the ſea breaks into the land in two armes, which our countrymen call the red ſea, and the Greekes Erythræum, of a king named *Erythras*: or as ſome thinke, becauſe the ſea by reaſon of the reflection and beating of the Sun beams, ſeemes of a reddiſh colour. There be that ſuppoſe this redneſſe is occaſioned of the ſand and ground which is red: and others againe, that the very water is of the own nature ſo coloured.

Chap. XXIV.

¶ *The Perſian and Arabian gulfes.*

THis red ſea is diuided into two armes: that from the Eaſt is named the Perſian gulfe, being in compaſſe 2500 miles, by the computation of *Eratoſthenes*. Ouer againſt this gulfe, in Arabia (which lieth in length 1200 miles) on the other ſide another arme there is of it called the Arabian gulfe, which runs into the Ocean Azanius. The mouth of the Perſian gulfe where it maketh entrance is 5 miles ouer, and ſome haue made it but 4: from which to the fartheſt point thereof, take a direct and ſtraight meaſure by a line, and for certaine it is, that it containeth 1225 miles: and is faſhioned directly like a mans head. *Oneſicritus* and *Nearchus* write, That from the riuer Indus to the Perſian gulfe, and ſo from thence to Babylon by the meeres and fens of the riuer Euphrates, it is 2500 miles. In an angle of Carmania inhabit the Chelonophagi, *i.* ſuch as feed vpon the fleſh of Tortoiſes, and the ſhells of them ſerue for rooſes to couer their cottages. They inhabit all that coaſt along the riuer Arbis, euen to the very cape: rough they are, hairy all their body ouer but their heads, and weare no garment but fiſh skins.

Chap. XXV.

¶ *The Iſland Caſſandrus: and the kingdomes vnder the Parthians.*

WHen you are paſt this tract of the Chelonophagi, directly toward India, there lieth fifty miles within the ſea the Iſland Caſſandrus, by report all deſart and not inhabited: and neere to it, with a little arme of the ſea between, another Iſland called Stois; wherein pearles are good chaffer, and yeeld gainfull trafficke. But to returne againe to Carmania, when you are beyond the vtmoſt cape thereof, you enter preſently vpon the Armozei, who ioyn vpon the Carmanians. But ſome ſay that the Arbij are between both: and that their coaſt may containe in the whole 402 miles. There are to be ſeen the port or hauen of the Macedonians, and the altars or columnes which *Alexander* erected vpon the very promontorie and vtmoſt cape. Where alſo be the riuers Saganos, Daras, and Salſos. Beyond which is the cape Themiſceas, and the Iſle Aphrodiſias well peopled. Then beginneth the realme of Perſis, which extendeth to the riuer Oroatus, that diuides it from Elymais. Ouer-againſt the coaſts of Perſis, theſe Iſlands be diſcouered, Philos, Caſſandra, and Aratia, with an exceeding high mountaine in it: and this Iſle is held conſecrated to *Neptune*. The very kingdome of Perſis Weſtward hath the coaſts lying out in length 450 miles. The people are rich, and giuen to royall and ſuperfluous expence in all things: and long ſince are become ſubiect to the Parthians, carying their name. And ſeeing we are come to ſpeake of them, we will briefly now mention their dominion and empire: the Parthians haue in all 18 realmes vnder them; for ſo they termed all their prouinces as they lie diuided about the two ſeas, as wee haue before ſaid: namely the red ſea Southward, and the Hircane ſea, toward the North. Of which, eleuen that lie aboue in the countrey, and are called the higher Prouinces, they take their beginning at the confines and marches of Armenia, and the coaſts of the Caſpians on the one ſide: and reach to the Scythians, whom they confront of the other ſide, with whom they conuerſe and keepe company together as Equalls. The other ſeuen are called the baſe or lower Realmes. As for the Parthians, their land was alwaies counted to ly at the foot and deſcent of thoſe mountains wherof we haue ſo often

ſpoken, which do enuirone and encloſe all thoſe nations. It confineth Eaſtward vpon the Arij, and Southward, vpon Carmania and the Arians: on the Weſt ſide it butteth vpon the Prarites and Modes: and on the North, boundeth vpon the realm of Hircania: compaſſed round about with deſerts and mountaines. The vtmoſt nations of the Parthians before yee come to thoſe deſarts be called Nomades: and their chiefe townes ſeated toward the Weſt, are Iſaris and Calliope, whereof we haue written before: but toward the Northeaſt, Europum; and Southeaſt Mania. In the heart and midland ſtandeth the citie Hecatompylos, as alſo Arſacia. And there likewiſe the noble region of Nyſæa in Parthyerum: together with the famous city Alexandropolis, bearing the name of *Alexander* the firſt founder.

Chap. XXVI.

Media, Meſopotamia, Babylon, and Seleucia.

REquiſit now it is and needfull in this place to deſcribe the poſiture and ſituation of the Medians kingdom, and to diſcouer all thoſe countries round about, as farre as to the Perſian ſea, to the end that the deſcription of other regions hereafter to be mentioned, may the better be vnderſtood. Wherein this firſt and formoſt is to be obſerued, that the kingdome of Media on the one ſide or other confronteth both Perſis and Parthia, and caſting forth a crooked and winding horne as it were toward the Weſt, ſeemeth to encloſe within that compaſſe both the ſaid realmes. Neuertheleſſe, on the Eaſt ſide it confineth vpon the Parthians and Caſpians: on the South, Sittacene, Suſiane, and Perſis: Weſtward, Adiabene: and Northward, Armenia: as for the Perſians, they alwaies confronted the red ſea, whereupon it was called the Perſian gulfe. Howbeit, the maritime coaſt thereof is called Cyropolis, and that part which confineth vpon Media, Elymais. In this realme there is a ſtrong fort called Megala, in the aſcent of a ſteep high hill, ſo direct vpright, that a man muſt mount vp to it by ſteps and degrees, and otherwiſe the paſſage is very ſtreight and narrow. And this way leadeth to Perſepolis the head city of the whole kingdome, which *Alexander* the great cauſed to be raſed. Moreouer in the frontiers of this Realme, ſtandeth the city Laodicea, built by king *Antiochus*. From whence as you turn into the Eaſt, the ſtrong fort or caſtle Paſſagarda is ſeated, which the ſages or wiſe men of Perſia called Magi, do hold, and therein is the tomb of *Cyrus*. Alſo the citie Ecbatana belonging to theſe ſages, which *Darius* the king cauſed to be tranſlated to the mountaines. Betweene the Parthians and the Arians lie out in length the Parotacenes. Theſe nations and the riuer Euphrates ſerue to limit and bound the ſeuen lower realmes abouenamed. Now are we to diſcourſe of the parts remaining behind of Meſopotamia; ſetting aſide one point and corner thereof, as alſo the nations of Arabia, wherof we ſpake in the former booke. This Meſopotamia was in times paſt, belonging wholly to the Aſſyrians, diſperſed into pettie villages and burgades, all ſaue Babylon & Ninus. The Macedonians were the firſt, that after it came vnder their hands reduced it into great cities, for the goodneſſe and plenty of their ſoile and territorie. For now beſides the abouenamed townes, it hath in it, Seleucia, Laodicea, and Artemita: likewiſe within the quarters of the Arabians named Aroei & Mardani, Antiochea: and that which being founded by *Nicanor*, gouernor of Meſopotamia, is called Arabis. Vpon theſe ioine the Arabians, but well within the countrey are the Eldamarij. And aboue them is the citie Bura, ſituat vpon the riuer Pellocontas: beyond which are the Salmanes and Maſeans Arabians. Then there ioine to the Gordiæans thoſe who are called Aloni, by whom the riuer Zerbis paſſeth, and ſo diſcharged into Tigris. Neere vnto them are the Azones and Silices mountainers, together with the Orentians: vpon whom confronteth the city Gaugamela on the Weſt ſide. Moreouer, there is Sue among the rocks: aboue which are the Sylici and Claſſitæ, through whom Lycus the riuer runneth out of Armenia. Alſo, toward the Southeaſt, Abſitris, and the town Azochis. Anon you come down into the plains & champion country, where you meet with theſe towns, Dioſpage, Poſitelia, Stratonicea, & Anthemus. As for the city Nicephorium, as we haue already ſaid, it is ſeated neer to the riuer Euphrates, where *Alexander* the great cauſed it to be founded, for the pleaſant ſeat of the place, and the commodity of the country there adioining. Of the city Apamia we haue before ſpoken in the deſcription of Zeugma: from which they that goe Eaſtward meet with a ſtrong fortified town, in old time carrying a pourpriſe & compaſſe of 65 ſtadia, called the royall pallace of their great dukes & potentates, named Satrapæ,

vnto which from all quarters men resorted to pay their impoſts, customs, and tributes; but now it is come to be but a fort and castle of defence. But there continue still in their entire and as flouriſhing ſtate as euer, the city Hebata and Ororos, to which by the fortunat conduct of *Pompey* the Great, the limits and bounds of the Roman empire were extended; and is from Zeugma 250 miles. Some writers report, that the riuer Euphrates was diuided by a gouernor of Meſopotamia, and one arme thereof brought to Gobaris, euen in that place where we ſaid it parted in twain: which was done for feare leſt one day or other the riuer with his violent ſtreame ſhould indanger the city of Babylon. They affirme alſo, that the Aſſyrians generally called it * Armalchar, which ſignifieth a royall riuer. Vpon this new arme of the riuer aforeſaid, ſtood ſometime Agrani, one of the greateſt towns of that region, which the Perſians cauſed to be vterly raſed and deſtroyed.

* Or rather Nahal Nalca, i. the kings riuer.

As for the city of Babylon, the chiefe city of all the Chaldæan nations, for a long time carried a great name ouer all the world: in regard whereof all the other parts of Meſopotamia and Aſſyria was named Babylonia: it contained within the walls 60 miles: the walls were 200 foot high, and 50 thick, reckoning to euery foot 3 fingers bredth more than our ordinary meaſure. Through the middeſt of this goodly great city paſſeth the riuer Euphrates: a wonderfull piece of worke, if a man conſider both the one and the other. As yet to this day the temple of *Iupiter Belus* there ſtands entire. This prince was the firſt inuenter of Aſtronomie. It is now decayed, and lieth waſte and vnpeopled, for that the city Seleucia ſtands ſo neere it, which hath drawne from it all reſort and traffique; and was to that end built by *Nicator* within 40 miles of it, in the very confluent where the new arm of Euphrates is brought by a ditch to meet with Tigris: notwithſtanding it is named Babylonia, a free ſtate at this day, and ſubiect to no man; howbeit they liue after the lawes and manners of the Macedonians. And by report, in this city there are 600000 citizens. As for the walls thereof, it is ſaid they reſemble an Eagle ſpreading her wings: and for the ſoile, there is not a territorie in all the Eaſt parts comparable to it in fertilitie. The Parthians in deſpight again of this city, and to do the like by it, as ſomtime was done to old Babylon, built the city Cteſiphon within three miles of it, in the tract called Chalonitis, euen to diſpeople and impouriſh it; which is now the head city of that kingdom. But when they could do little or no good thereby to diſcredit the ſaid new Babylon, of late dayes *Vologeſus* their king founded another city hard by called Vologeſo Certa. Moreouer, other cities there are beſides in Meſopotamia, namely Hipparenum, a city likewiſe of the Chaldæans, and innobled for their learning as well as Babylon; ſcituate vpon the riuer Narragon, which gaue the name vnto that city. Howbeit the Perſians cauſed this Hypparenum to be diſmantled, and the walls thereof to be demoliſhed. There be alſo in this tract the Orchenes towards the South, from whence is come a third ſort of the Chaldæans, called Orcheni. Being paſt this region, you meet with the Notites, Orthophants, and Græciophants. *Nearchus* and *Oneſicratus*, who regiſtred the voiage of *Alexander* the Great into India, report, That from the Perſian ſea to the city Babylon by the riuer Euphrates, is 412 miles. But the later and moderne Writers do count from Seleucia to the Perſian gulfe 490 miles. K. *Iuba* writeth, That from Babylon to Charax is 175 miles. Some affirme moreouer, That beyond Babylon the riuer Euphrates doth maintaine one entire courſe, and keepeth one channel 87 miles, before he is diuided into ſeuerall branches here and there, for to water the country: and that he holdeth on his courſe from his head to the ſea for the ſpace of 1200 miles. This varietie of Authors as touching the meaſure is the cauſe why a man may not ſo wel reſolue and conclude thereof, conſidering that euen the very Perſians agree not about the dimenſions of their Scœnes and Paraſanges, but haue diuers meaſures of them. Whereas the riuer Euphrates giueth ouer his owne chanel, (which for the bredth thereof is a ſufficient munition to it ſelfe) and beginneth to part into diuers branches, which it doth about the marches & confines of Charax, in all the tract neere adioyning, great danger there is of the Attalæ, a thecuiſh nation amongſt the Arabians, who preſently ſet vpon all paſſengers comming and going to and fro. When you are paſt this infamous and ſuſpected Region, you ſhall enter into the Countrey of the Schenites. As for the Arabians which are called Nomades, they occupie all the coaſts of the riuer Euphrates, as farre as to the Deſarts of Syria. From the which place we haue ſaid that hee turned, and tooke his way into the South, abandoning the deſarts of Palmyrene. To conclude, from the beginning and head of Meſopotamia, it is counted to Seleucia, if you paſſe vpon the riuer Euphrates, 1125 miles:

miles: and from the red ſea, if you go by the riuer Tigris, 320 miles: from Zeugma 527 miles: and to Zeugma from Seleucia in Syria vpon the coaſt of our ſea, is reckoned 175 miles. This is the very true and iuſt latitude there, of the firm land between the two ſeas, to wit, the Perſian gulfe and the Syrian ſea. As for the kingdome of Parthia, it may containe 944 miles. Finally, there is yet another towne of Meſopotamia vpon the banke of Tigris, neere the place where the riuers meet in one, called Digba.

Chap. XXVII.

¶ *The riuer Tigris.*

MEet alſo and conuenient it is to ſay ſomewhat of the riuer Tigris. It begins in the land of Armenia the greater, iſſuing out of a great fource; and euident to be ſeen in the very plaine. The place beareth the name of Elongoſine. The riuer it ſelfe ſo long as it runs ſlow and ſoftly is named Diglito; but when it begins once to carry a more forcible ſtreame it is called Tigris, for the ſwiftneſſe thereof; which in the Medians language betokens a ſhaft. It runs vp into the lake Arethuſa, which beareth vp aflote all that is caſt into it, ſuffering nothing to ſinke; and the vapors that ariſe out of it carry the ſent of Nitre. In this lake there is but one kind of fiſh, and that entreth not into the chanell of Tigris as it paſſeth through, nor more than any fiſhes ſwim out of Tigris into the water of the lake. In his courſe and colour both he is vnlike, and as he goes may be diſcerned from the other: and being once paſt the lake, and incountreth the great mountain Taurus, he loſeth himſelf in a certain caue or hole in the ground, and ſo runs vnder the hill, vntill on the other ſide thereof he breaketh forth again, and appeares in his likeneſſe, in a place called Zoroanda. That it is the ſame riuer it is euident by this, that he carrieth through with him, and ſheweth in Zoroanda, what ſoeuer was caſt into him before he hid himſelfe in the caue aforeſaid. After this ſecond ſpring and riſing of his he enters into another lake, and runneth through it likewiſe, named Thoſpites; and once again takes his way vnder the earth through certain blinde gutters, and 25 miles beyond he putteth forth his head about Nymphæum. *Claudius Cæſar* reporteth, that in the countrey Arrhene, the riuer Tigris runs ſo neere the riuer Arſania, that when they both ſwell, and their waters are out, they ioyne both their ſtreams together, yet ſo, as the water is not mingled: for Arſanias being the lighter of the twain, ſwimmeth and floteth ouer the other for the ſpace wel-neere of 4 miles: but ſoon after they part aſunder, and Arſania turneth his courſe toward the riuer Euphrates, into which he entreth. But Tigris receiuing into him certain goodly great riuers out of Armenia, to wit, Parthenis, Agnice, and Pharion, & ſo diuiding the Arabians & Troeanes from the Adiabenes, and by this means making as it were an Iſland of Meſopotamia aforeſaid, after he hath paſſed by and viewed the mountaines of the Gordiæans, neere vnto Apamia a town of Meſene on this ſide Seleucia ſyrnamed Babylonia, 125 miles: diuiding himſelfe into two armies or channels, with the one he runneth Southward to Seleucia, watering as he goeth the country of Meſſene; and with the other windeth Northward: he goeth on the backſide of the ſaid Meſene, and cutteth through the plains of the Cauchians. Now when theſe two branches are re-vnited again, the whole is called Paſitigris. After this, he taketh into him out of Media, the great riuer Coaſpes: and ſo paſſing between Seleucia and Cteſiphon, as we haue ſaid, he fals into the meeres and lakes of Chaldæa, which he furniſheth and repleniſheth with water for the compaſſe of ſeuentie miles: which done, he iſſueth forth againe, guſhing out with a mighty great and large ſtreame, and running along the towne Charax, on the right hand thereof, he diſchargeth himſelfe into the Perſian ſea, carrying there a mouth ten miles ouer. Between the mouthes of theſe two riuers, Tigris & Euphrates, where they fall into the ſea, were counted in old time 25 miles, or as ſome would haue it but ſeuen: and yet both of them were nauigable, and bare right great ſhips. But the Orcheniens and other neighbor inhabitants, long ſince turned the courſe of Euphrates aſide to ſerue their owne turnes in watering their fields, and ſtopped the ordinarie paſſages thereof, inſomuch as they forced him to run into Tigris, & not otherwiſe than in his chanell to fall into the ſea. The next country bordering vpon Tigris is called Parapotania, in the marches whereof is the city Meſene, whereof we haue ſpoken. The chiefe towne thereof is Dibitach: from thence you enter preſently into the region Chalonitis, ioyning hard vpon Cteſiphon, a rich country, beautified not only with rowes of date trees, but alſo with Oliue, Apple,

and peare trees, and generally with all sorts of fruit. Vnto this country extends the mountaine Zagrus, comming along from out of Armenia, between the Medes and Adiabenes, aboue Parætacene and the realme of Persis. Chalonitis is from Persis 480 miles distant: & some write, that going the streight, direct, and neerest way, it is so much and no more from the Caspian sea to Assyria. Between these countries and Mesene lieth Sittacene, the same that Arbelitis and Palestine. The townes of importance therein are Sittace, held by the Grecians, scituat toward the East, and Sabata: but on the West side Antiochia, seated betweene the two riuers Tigris and Tornadotus. In like manner Apamia, which *Antiochus* the king so called after his mothers name. This City is inuironed as it were with the riuer Tigris, and diuided with the riuer Archous which passeth through it. Somwhat lower than these countries lieth the region Susian, wherein stood the antient royall pallace and seat towne of the Persian kings, Susa, founded by *Darius* son of *Hystaspes*; and from Seleucia Babylonia it is 450 miles distant: & as much from Ecbatana in Media, taking the way along the mountaine Charbanus. Vpon that branch of the riuer Tigris that taketh his course Northward, stands the towne Babytace; and from Susa it is 135 miles. The people of this country are the only men in the world that hate gold: and in very truth get it they do, and when they haue it, they bury it sure enough within the ground, that it may serue for no vse. Vpon the Susianes Eastward ioyn the Cossæans, Brigands, and theeues generally all. Likewise the Mizæans, a free state, and subiect to no gouernment, hauing vnder them 40 nations, all wilde, and liuing as they list. Aboue these quarters you enter into the countries of the Parthusians, Mardians, Saites, and Hyans, who confine vpon high Persia called Elemais, which ioineth to the maritime coasts of Persis, as is aboue said. The city of Susa is from the Persian sea 250 miles. On that side whereas the Armada of *Alexander* the Great came vp the great riuer Pasitigris to Susa, there stands a Village on the lake Chaldais, name Aphle, from which to Susa is 65 miles and an halfe by water. The next that border vpon the Susians Eastward are the Cossæans: and aboue the Cossæi Northward lieth Mesobatene vnder the hil Cambalidus, which is a branch and dependant of the mountain Caucasus; and from thence is the most easie and ready passage into the country Bactriana. The riuer Eulæus makes a partition betwixt the high country of Persis called Elimais, and Susiane. This riuer issueth out of the Medians country, & in the midst of his course loseth himself vnder the ground: but being once vp againe he runneth through Mesobatene, and inuironeth the fort & castle of Susa, with the Temple of *Diana*, which is had in great reuerence and honour aboue all other Temples in those parts: yea, and the very riuer it selfe is in much request, and the water thereof ceremoniously regarded; in such wise, as the kings drinke of no other, and therefore they fetch it a great way into the country. And it receiueth into it the riuer Hedypnus, which commeth along the Priuiledged place whereinto the Persians vse to retyre for sanctuarie, and one more out of the Susianes countrey. A towne there is planted neere vnto it, called Magoa, 15 miles from Charax: yet some there be that would haue this towne to stand in the vtmost marches of Susiana, euen close to the mountaines and desarts. Beneath the riuer Eubæus lieth Elimais, ioyning to Persis in the very maritime coast; 240 miles it is from the riuer Oroates to Charax: the towns in it be Seleucia and Sosirate, both scituate vpon the hanging of the hill Casyrus. The flat coast and leuell thereof, which lieth before it, is, as we haue said before, no lesse dangerous and vnaccessible than the Syrts, for quaqemires, by reason of the great store of mud and sand together, which the riuers Brixia and Ortacea bring downe with them. Ouer and besides, the countrey Elemais is so fenny, and standeth with water so wet, that there is no way through it to Persis, but a man must fetch a great circuit and compasse about it to come thereto. Moreouer, it is much haunted and annoied with serpents, which breed and come downe in those riuers: And as troublesome as the passage is all the countrey ouer, yet that part yeeldeth the worst aduenues, and is least frequented, which is called Characene, of the towne Charax, which limits the kingdomes of Arabia, whereof we will speake anon more at large, after wee haue set downe the opinion of *M. Agrippa*, which he hath deliuered as touching these quarters: for he hath written, that Media, Parthia, and Persis are bounded on the East side with the riuer Indus; on the West with Tigris; on the North part with the two mountaines, Taurus and Caucasus; and on the South coast with the red sea: also that they extend in length 1320 miles, and in bredth eight hundred forty. Moreouer, that Mesopotamia by it selfe alone is inclosed Eastward with the Riuer Tigris, and Westward with Euphrates; hauing on the North side the mountaine Taurus,

Taurus, and on the South the Persian sea: lying out in length 800 miles, and in bredth 360: now to returne vnto Charax, the inmost towne within the Persian gulfe, from which Arabia called Eudæmon, *i.* happie, begins and runneth forth in length; scituate it is vpon a mount artificially reared by mans hands between the confluents of Tygris on the right hand, and Eulæus on the left; and yet notwithstanding it carrieth a pourprise or precinct of three miles compasse. Founded first it was by *Alexander* the great, who hauing drawne Coloners to inhabite it out of the kings city Durine (which then was ruinat) and leauing there behind him those soldiers which were not fit for seruice, nor able to follow in the march, ordained, that this town should be called Alexandria: and the territory about it Pellæum, of the town where himselfe was born: and withall appointed, that it should be peopled only with Macedonians. But this towne of his by him founded, was ouerthrowne and destroied by the two riuers aforesaid. Afterwards K. *Antiochus* the fift rebuilt it again, and named it of himself Antiochia. But when it was decaied a second time by these riuers, *Spasines*, son of *Sogdonacus*, who held Arabia, bordering neere by as an absolute king, and not (as *Iuba* reporteth) as a duke or gouernor vnder *Alexander*, raised great wharfes, and opposed mightie dams and causies against those riuers, and so re-edified the town a third time. Which done, he called it after his own name Charax of Spasines: and verily hee fortified thus the site and foundation thereof, three miles in length, and little lesse in breadth. At the beginning it stood vpon the sea-coast, and from the water side not aboue ten stadia, and euen from thence it hath certain false bastard galleries: but by the report of *Iuba* in his time, 50 miles. Howbeit, at this day both the Arabian Embassadors, and also our merchants that come from thence, say it is from the sea shore 125 miles. In such sort, that it cannot be found in any place of the world again, where the earth hath gained more, nor in so short a time, of the water, by reason of the store of mud brought down with riuers. And the more maruell it is, that considering the sea floweth, and the tide riseth far beyond this towne, yet those made grounds are not beaten back, and carried away againe. In this very towne I am not ignorant that *Dionysius* the latest of our moderne Geographers was born, whom *Augustus* the Emperor sent of purpose beforehand into the East countries to discouer those parts, and record faithfully in writing whatsoeuer he there found, for the better aduertisement of his elder son, who was vpon his voiage aud expedition of Armenia, to war against the Parthians and Arabians. Neither haue I forgotten, that in my first entrance into this worke in hand, I made some protestation to follow those who had written of their owne countries, as men lightly most diligent and of best intelligences in that behalfe. Howbeit, in this place I chuse rather to follow our martiall captaines that haue warred there, and report me also to K. *Iuba*, who hath written certain books to *C. Cæsar Caligula*, as touching the occurrences in the Arabian voiage.

Chap. XXVIII.

¶ *Arabia, Nomades, Nabatæi, and Omani: Tylos and Ogyris two Islands.*

Arabia commeth behind no country in the world, for largenesse and greatnesse, especially reaching out in length a mighty way. For it beginneth at the fall and descent of the mountaine Amanus ouer-against Cilicia and Comagene, as we haue before said: where it is peopled with many nations brought from thence thither by *Tigranes* the great, to inhabite that quarter, and in old time descended naturally, and reached as far as to our sea & the Ægyptian coast, as we haue shewed; yea, and extendeth into the midland parts of Syria to the mountain Libanus, where the hils reach vp to the very clouds: vpon which bound the Ramisians, then the Taraneans, and after them the Patami. As for Arabia it self, being like a demie Island, runneth out between two seas, the red and the Persian, by a certain artificiall workmanship of nature, framed according to Italy in likenesse of forme and bignesse: yea, and lieth along the sea coasts in manner of Italy. And more than that, it regardeth the same quarter and line of heauen, without any difference at all. This tract thereof, for the rich seat it hath, is named *Fœlix, i.* Happy. The nations therein dwelling, from our sea-coasts to the desarts of Palmyreum, wee haue treated of already. Therfore ouerpassing them, we will discourse of the rest forward. Now then, the Nomades & those robbers that so lie vpon the Chaldæans & trouble them, the people called Scenitæ, as we haue before said, do confine vpon. And euen they also make no certain place of abode and habitation, but are called Scenitæ, of their tabernacles and booths which they

they make of haire clothes,and encamp vnder them when & where they list. Being past them, G
you meet with the Nabatæans in the vale, who inhabite a towne there named Petra,little lesse
than 2 miles large; inuironed with steep mountains round about,which cut off al the aduenues
to it:and besides,hauing a riuer running through the midst thereof. Distant it is from Gaza (a
town scituat vpon our coast in Syria) 600 miles:and from the Persian gulfe 122. And here at
this town meet both the port high waies,to wit,the one which passengers trauell to Palmyra in
Syria,and the other,wherein they go from Gaza. Beyond Petra and the vale thereof, you enter
into the Omanes country:which reached somtime as far as to Carax, and inhabited 2 famous
townes built by queen *Semiramis*,namely,Abesanius,and Soractia. But now all is but a wilder-
nesse.Then come you to a town named Forath,scituat vpon the riuer Pasitigris, and subiect to
the king of the Caracins or Zarazins: to which towne there is much resort from Petra, as to a H
shire towne: and from thence to Charax,they may passe with the tide when the water ebbeth
for the space of 12 miles.But they that come by water out of the Parthian kingdom,meet with
a village called Teredon, lower than the place where Euphrates and Tigris meet together in
one. Where the Chaldæans inhabit the left hand coast of the riuer, and the Nomades called
Scenitæ,the right. Some writers affirm,that as ye saile and row vpon the riuer Tigris, yee passe
by two other townes distant far asunder:the one called Barbatia in times past, and afterwards
Thumata,which our merchants that trafficke in those parts, auouch to be ten daies saile from
Petra, and is vnder the king of the Characenes:and the other Apamia, scituat in the very place
where Euphrates the riuer so swelleth ouer his bankes, that he ioineth with Tigris in one con-
fluent.And therefore the Apamians, at what time as the Parthians are about to make inrodes I
and inuade their territorie,set open the sluces,and breake vp the wharfes and banks that keepe
these two riuers asunder,and so impeach their enterprise by the ouerflow and inundation of
the waters.Now being past Charax,we will discourse of the other coasts of Arabia, & namely
that which first was discouered and declared by *Epiphanes*. And to begin with the place where
sometime the mouth of Euphrates was.When you are once past it,you meet with a riuer of salt
brackish water,and the promontory or cape Chaldonum:where the sea is more like a deep pit
or whirlepoole than a sea,for 50 miles.Vpon this coast you find the riuer Achana,and beyond
it,desarts for 100 miles,vntil you come to the Iland Ichara.Then sheweth it selfe the gulfe or
arme of the sea named Capeus,vpon which inhabit the Gaulopes and Chateni. Beyond them
another creeke called Gerraicus,and the towne Gerræ vpon it,fiue miles large;& fortified with K
turrets made of great huge stones squared,of salt minerall.Fifty miles from the sea side is the
region Attene:and ouer-against it the Iland Tylos,as many miles from the shore,with a town
in it,bearing the name of the Iland,much frequented by merchants for the plentie of pearles
that there be sold:and not far from it there is another somewhat lesse, not past 12 miles from
the cape of the foresaid Tylos.Beyond these there are discouered by report certaine great I-
slands,but as yet they haue not bin landed vpon by our merchants.As for this last Iland,it con-
taineth as they say 112 miles and an halfe in circuit, & is far from Persis; but no accesse there
is vnto it,but only by one narrow gutter or channell. Then sheweth it selfe the Iland Asgilia.
And in these parts likewise are other nations,namely,the Nocheti,Zurachi,Borgodi,Cataræi, L
and Nomades:and withall the riuer Cynos.Beyond that,as K. *Iuba* saith, there is no more dis-
couered vpon this sea of that side, by reason of the dangerous rockes therein. And I maruell
much that he hath made no mention at all of the towne Batrasabe in the Omanians countrey,
ne yet of Omana, which the antient Geographers haue held to be an hauen of great impor-
tance in the kingdome of Carmania. *Item*,he saith not a word of Omne and Athanæ,which our
merchants report to be at this day 2 famous mart towns,much frequented by those that traf-
ficke from the Persian gulfe.Beyond the riuer Caius,as K.*Iuba* writeth,there is an hill, which
seemeth all scorched and burnt.Past which,you enter into the countrie of the Epimaranites:
and anon after into the region af the Ichthyophagi: and past them there is discouered a desart
Iland,and the Bathymians country:and so forward, the mountaines Eblitæi are discouered,
and the Iland Omœnus,the hauen Machorbæ,the Islands Etaxalos,Onchobrice,and the peo- M
ple called Chadæi.Many other Islands also of no account,and nameless: but of importance,
Iſura, Rhinnea; and one other verie neere thereto, wherein are standing certaine Columnes
or pillers of stone engrauen with vnknowne Characters and Letters. A little beyond the port
towne Gobœa, and the desart vnpeopled Islands Bragæ. The Nation of the Thaludæans :
the

A the region Dabanegoris,the mountaine Offa with an hauen vnder it: the gulfe or arme of the
sea called Duatus,with many Islands therein: Also the mountaine Tricoryphus: the countrey
Cardalena, the Islands Solanidæ and Capina. Soone after you fall vpon other Islands of
the Ichthyophagi: and after them the people called Glarians, The strond called Hammæum,
wherein are golden mines. The region Cahauna. The people Apitami and Gasani. The Iland
Deuadæ, with the fountaine Goralus. Then come you to the Gasphets country: the Islands A-
leu & Amaarnethu. Beyond which are the people called Darræ,the Iland Chelonitis, & ma-
ny other of the Ichthyophagi. The Isle Bodanda which lieth desart & Basage, besides many o-
ther that belong to the Sabæans. For riuers you haue Thamar & Amnon,& in the Islands
Dolicæ,wherein be the fountaines Daulotes and Dora. Ilands besides,to wit, Ptetos, Labaris,
Covoris and Sambracate,with a towne so named also in the firme land. On the South side ma-
B ny Islands there be,but the greatest of them all is Camara. Then haue you the riuer Myscecros,
the hauen Leupas,& the Sabæans called Scenitæ, for that they liue vnder tabernacles & tents.
Moreouer,many other Islands. The chiefest mart or town of merchandise in those parts is Acr-
la,where the merchants vse to imbarke for their voiage into India. Then followeth the region
Amithosentia,and Damnia. The Mizians,both the greater and the lesse. The Drimurians and
Macæ. A promontory of theirs is ouer-against Carmahia,and distant from it 50 miles. A won-
drous thing is reported to haue bin there done,& that is this:that *Numenius* lord deputy vnder
K. *Antiochus*,ouer Mesena,& general of his army,defeated the nauy of the Persians in sea-fight,
and the same day with the opportunity of the tide returned to land againe, & gaue their horse-
men an ouerthrow to it:whereupon,in memoriall of a twofold victory in one day atchieued,he
C erected 2 triumphant trophies,the one in honor of *Iupiter*,& the other of *Neptune*. Farre within
the deep sea there lieth another Island called Ogyris,distant from the continent 125 miles,and
containing in circuit 112,much renowned for the sepulchre of K. *Erythra*,who there was enter-
red. Another likewise there is of no lesse account,called Dioscoridu,lying in the sea Azanium
and is from Syagrum,the vtmost point or cape of the main,280 miles. But to returne to
Continent:there remaine yet not spoken of,the Antarides toward the South,as you turn to the
mountains,which continue for 7 daies iourny ouer:then these nations,Larendanes,Catabanes,
and Gebanites:who haue many townes,but the greatest are Nagia and Tamna, with 65 chur-
ches or temples within it,whereby a man may know how great it is.From thence you come to
D a promontory,from which to the continent of the Troglodites it is 70 miles. And in those quar-
ters remaine the Toanes, Acchitæ, Chatramotitæ, Tomabei, Antidalei, Dexianæ, Agrei, Cerba-
ni,and Sabæi,of all the Arabians for their store of frankincense most famous, as also for the
largenesse of their country,reaching from sea to sea. Their townes scituate vpon the coast of
the red sea,are Marane,Marmia,Cocolia and Sabatra. Within the firme land are these townes,
Nascus,Cardaua,Carnus,and Tomala,where the Sabæans keep their faires and markets for to
vent and sel their commodities of incense,myrrhe,and such drugs and spices. One part of them
are the Atramites,whose capitall city Sobotale,hath within the wals thereof 60 temples. But
the roiall city and chiefe seat of the whole kingdome is Nariaba:scituat vpon a gulfe or arm of
the sea that reacheth into the land 94 miles,ful of Islands, beautified with sweet odoriferous
E trees.Vpon the Atramites within the main land ioine the Minæi:but the Elamites inhabit the
maritime coast,where there standeth a city also called Elamitum. To them the Cagulates lye
close:and their head towne is Siby,which the Greekes name Apate. Then come you to the
Arsicodani and Vadei,with a great towne: and the Barasei: beyond whom is Lichemia, and
the Island Sygaros,into which no dogs will come willingly: and if any be put there, they will
neuer lin wandring about the shore vntill they die. In the farthest part of the aboue-said gulfe
are the Leanites,whereof the gulfe tooke the name Leanites. Their head seat and roiall seat is
Agra: but the city Leana,or as others would haue it, Ælana, is scituate vpon the verie gulfe.
And hereupon our writers haue called that arme of the sea Ælaniticum, others Ælenaticum;
Artemidorus, Aleniticum; and king *Iuba*, Læniticum. Arabia is reported to take in circuit
F from Charax to Leana,4870 miles. But *Iuba* thinketh it somewhat lesse than 4000. Widest
it is in the North parts betweene the townes Herous and Chrace. Now it remaineth that
wee speake of other parts within the Mid-land thereof. Vpon the Nabatæi, the Thimaneans
doe border,after the description of the old Geographers: but at this day, the Tauenes, Sa-
ellenes, and Saracenes: their principall Towne is Arra, wherein is the greatest trafficke and
resort

resort of merchants. Moreouer, the Hemnates and Analites, whose townes are Domada and E- G
rage: also the Thamusians, with their towne Badanatha: the Carreans, and their towne Charia-
ti: the Achoali, and a city of theirs Phoda. Furthermore, the Minæi, descended as some thinke
from *Minos* king of Crete: whose citie Charmæi hath 14 miles in compasse. Other townes like-
wise be there standing a far off, and namely, Mariaba, Baramalacum, a town ywis of no mean ac-
count: likewise Carnon, and Ramei, who are thought to come from *Rhadamanthus* the brother
of *Minos*. Ouer and besides, the Homerites, with their towne Massala: the Hamirei, Gedrani-
tæ, Anapræ, Iliianitæ, Bochilitæ, Sammei, and Amathei, with these townes Nessa and Cenne-
seri. The Zamanenes, with these townes, Saiace, Scantate, and Bacasmani: the towne Rhipheat-
ma, which in the Arabian tongue signifieth Barley: also the Antei, Rapi, Gyrei, and Marhatæi.
The Helmadenes, with the towne Ebode. The Agarturi in the mountaines, hauing a towne 20 H
miles about, wherein is a fountaine called Emisehabales, that is as much to say, as The Ca-
mels town. Ampelone, a colony of the Milesians: the towne Acrida: and the people Calingij,
whose towne is named Mariaba, as much to say as, Lords of all. Townes moreouer, Pallon & Mu-
rannimal, neere vnto a riuer, by which men thinke that Euphrates springeth and breaketh forth
aboue ground. Other nations besides, namely, Agrei and Ammonij: with a towne, Athenæ: and
the Caurarani, which signifieth, Most rich in droues of cattell. Then the Caranites, Cæsanes,
and Choanes. There were sometime also certaine townes in Arabia, held by Greeks, and name-
ly, Arethusa, Lariſſa, and Chalcis, which all in the end came to ruine and were destroyed in di-
uers and sundry wars. The onely man among the Romans vntill this day that warred in those
parts, was *Ælius Gallus* a knight of Rome. As for *Caius Cæsar* the son of *Augustus* the Emperor, I
he did but looke only into Arabia, and no more: but *Gallus* wasted townes that were not once
named by Authors that wrote before, namely Egra, Anneſtum, Essa, Maguſum, Tamuracum,
Laberia, and the aboue-named Marieba, which was in circuit six miles about: likewise Cari-
peta, the farthest that he went vnto. As for all other matters, he made report vnto the Senate of
Rome, according as he had found and discouered in those parts; to wit, that the Nomades liue
of milke and veniſon: the rest of the Arabians presse wine, like as the Indians do, out of dates:
and oile of Sesama, a kinde of graine or pulse in those countries. That the Homerites country
of all others is most populous and replenished with people: the Minæans haue plenteous and
fruitfull fields, full of date trees and goodly hortyards stored with all sorts of fruit: but their
principall riches lieth in cattell. The Cembanes and Arians are good warriours and martiall K
men, but the Chatramotites that way excell all the rest. The Caræans haue the largest territo-
ries and most fertile fields for corne. As for the Sabæans, their wealth standeth most vpon their
woods and trees, that bring forth the sweet gums of Frankincense and myrrhe: also in mines of
gold: hauing water at commandement to refresh their lands, and plenty besides of hony & wax.
As concerning the sweet odours and spices that come from thence, we will speake thereof in a
seuerall booke by it selfe. The Arabians weare miters or turbants ordinarily vpon their heads,
or else go with their haire long and neuer cut it: as for their beards, them they shaue, saue only
on their vpper lippe, which they let grow still: and yet some of them there be that suffer their
beards to grow long and neuer cut them. But this one thing I maruell much at, that being such
an infinit number of nations as they be, the one halfe of them liue by robberie and theeuing,
how soeuer the other liue by traffick and merchandise. Take them generally, they be exceeding
rich; for with them the Romans and Parthians leaue exceeding sums of gold and siluer, for the
commodities out of their woods and seas which they sell vnto them: but they themselues buy
nothing of them againe. Now will we speake of the other coast opposite vnto Arabia. *Timoſ-*
thenes hath set downe, that the whole gulfe or arm of the sea called Red, was from one end to the
other foure daies sailing: and from side to side, two daies: that the streights of the firth were
seuen miles ouer. But *Eratosthenes* saith, that taking the measure at the very mouth, it is euerie
way 1300 miles.

Chap. XXIX.

¶ *The gulfe of the Red Sea: likewise of the Trogloditicke and Æthiopian Seas.*

ARtemidorus auoucheth, that the Red Sea toward Arabia side, is 1450 miles: but on the
coast of the Troglodites 1182, vntill you come to the citie Ptolemais. Most Geogra-
phers haue set downe the breadth thereof to bee 462 miles: and that the mouth of it
where,

A where it openeth wide; full against sun-rising in winter [*i.* South-west] some say, is 7 miles broad,
and others 11. As for the posture & situation thereof, thus it lyeth: beyond the branch or arme
thereof called Ælaniticus, there is another creeke which the Arabians call Æant, vpon which
standeth the towne Heroon. In old time there was a city called Cambisu, betweene the Nelians
and Marchandians, into which the sicke and feeble souldiers of our armie were conueied, as to
a place of retreat and repose. Beyond which, you enter into the land of Ayra: and there is the
port Daneon to be seene, from which *Sesostris* a king of Ægypt, was the first that imagined and
deuised to draw one arme of it with a channell nauigable, into Nilus, in that part where it run-
neth to the place called Delta, and that for 62 miles space, which is between the said riuer and
B the red sea. This enterprise of his was followed by *Darius* king of the Persians: yea and by *Pto-*
lomæus king of Egypt, second of that name, who made a channell 100 foot ouer, and 30 deep, for
37 miles in length and an halfe, euen to the bitter fountaines. But this designe was interrup-
ted and the ditch went no farther, for feare of a generall deluge and inundation: for found it
was, that the red sea lay aboue the land of Egypt three cubits. Some alledge not that to be the
cause, but this, namely, That if the sea were let into Nilus, the sweet water thereof (wherof they
drinke only and of none else) should be corrupted thereby and marred. Yet neuertheless, al-
though this worke went not forward, the way is well beaten all the country ouer betweene the
Red sea, and the Ægyptian, for traffieke: and three seuerall ordinarie waies there are between:
the one from Pelusium ouer the sands; where, vnles there be reeds set vp pitched in the ground
to giue guidance and direction, there would no path be found, for euer & anon the wind blow-
eth the sand ouer the tracts of mens feet and coureth all. A second beginneth 2 miles beyond
C the mountaine Casius, which after 60 miles commeth into the former Pelusiacke way. (Vpon
this great rode way, the Arabians called Autei, do inhabit.) The third taketh his head and be-
ginning at Gereum, which they call Adipson, and holdeth on through the said Arabians, & is
60 miles neerer way, but full of craggie hils and altogether without waters. All these foresaid
waies lead to the city Arsinoe, built vpon the gulfe Charandra by *Ptolomæus Philadelphus*, and
bare his sisters name: and verily hee was the first that discouered those parts, and searched nar-
rowly into the region Trogloditicum: and the riuer that passeth by Arsinoe, he called Ptolo-
mæus. Within a little of this place, there is a little town named Ænum; for which, some there
be that write, Philotera. Beyond them, are the Azarei: Arabians of the wilder sort & halfe Tro-
D glodites, by reason they marry their wiues from out of the Troglodites countrey. Beeing past
these coasts, you shall finde the Ilands Sapyrene and Scytala: and within a little thereof, de-
serts vntil you come to Myos-hormos, where there is a fountaine called Taduos, the mount
Eos, the Island Lambe, many hauens besides, and Berenice a town, bearing the name of the mo-
ther to K. *Ptolomæus Philadelphus*, to which there is a way lying from Coptos, as we haue said: &
last of all the Arabians called Autei, and Gnebadei. Now it remaineth to speake of the region
Trogloditicum, which the antient men of old time called Michoe, & others Midoe: & therein
standeth the mountaine Pentedactylos. Vpon the coast of this country, there lie to be seen cer-
taine Ilands called Stenæ-deiræ: and others no fewer in number named Halonnesi: also Car-
damine, and Topazos, which Island gaue the name to the precious stone called the Topaze.
E Then come you to an arme of the sea betweene two lands, full of pettie Islands, whereof that
which is called Mareu, is well serued with water sufficient: another, Eratonos, is altogether dry
and vnprouided of fresh water. These Ilands tooke name of two captains and gouernors there
vnder the king. Within-forth farther into the firm land, inhabit the Candei, whom they call
Ophiophagi, because they are wont to feed on serpents: and in truth there is not another coun-
try that breeds them more than it. K. *Iuba* who seemeth to haue taken great paines in the dili-
gent perusing and discouery of these parts, omitted in all this tract (vnlesse there be some fault
and defect in them that copied out his first originall) to speake of a second city named Bere-
nice, with the addition of Panchrysos; as also of a third called Epidires; and yet renowned it is
in regard of the place whereupon it is seated: for scituat it is vpon a knap of land bearing far into
the red sea, euen where the mouth of it is not aboue 4 miles & an halfe, from Arabia. Within
the prospect of this tract there is the Island Cytis, which also bringeth forth good store of the
Topaze stones. Beyond this quarter, nothing but woods and forrests, where K. *Ptolomæus* surna-
med *Philadelphus* built the city Ptolemais, onely for to chase and hunt the Elephant, neere to
the lake Monoleus; and in regard of his game there, he named it Epi-theras. This is the verie
countrey

country mentioned by me in the second book: wherein for 45 daies before Mid-summer, or the entrance of the Sun into Cancer, and as many after, by the fixt houre of the day, that is to say, about noone, no shadowes are to be seen: which being once past, all the day after they fall into the South. As for other daies of the yere besides, they shew into the North: whereas in that citie Berenice which we mentioned first, vpon the very day only of the Sun-stead, at the sixth houre or noon-tide, the shadowes are cleane gone and none to be seene (for otherwise there is no alteration at all to be obserued throughout the yeare) for the space of 600 miles all about Ptolemais. A strange & notable thing worth obseruation, that it should be so but in one houre all the yere long, and a matter that gaue great light and direction to the world, yea and ministred occasion to a singular inuention and subtil conclusion: for *Eratosthenes* vpon this vndoubted argument and demonstration of the diuersitie of shadowes, set in hand hereupon to take the measure of the whole globe of the earth, and put it downe in writing to all posteritie. Beyond this city Ptolemais, the sea changeth his name and is called Azanium; ouer which the cape sheweth it selfe, which some haue written by the name of Hispalus: also, anon appeareth the lake Mandalum, and in it the Island Colocasitis; but in the deep sea many more, wherin are taken many tortoises. Farther vpon this coast is the towne Suchæ, and then you may discouer in the sea the Island Daphnis, and the city Aduliton, built by certaine Ægyptian slaues who ran away from their masters and took no leaue: and verily this is the greatest and most frequented mart towne of all the Troglodites country, and put the Ægyptians to them: and it is from Ptolemais 5 daies sailing. Thither is brought great store of yuorie, or the Elephants tooth, and of the horn of the Rhinoceros: there many a man haue plenty of the sea-horse hides, of tortoise shels, of little Monkies or Marmosets: there also a man may be sped with bondslaues. A little beyond are the Æthiopians, called Aroteres: also the Islands named Aliæa: and besides them other Islands, namely, Bacchias, Antibacchias, and Stratonis: being past them, there is a gulf in the coast of Æthiopia, as yet not discouered or knowne by any name: a thing that may make vs maruel much, considering that our merchants search into farther corners than so. Also a promontory, wherein there is a fountaine of fresh water named Curios, much desired of the sailers that passe that way, and in great respect for the refreshing that it yeeldeth vnto them: beyond it, is the harbor or port of Isis, distant from the towne of the Adulites aboue said, ten days rowing with ores; and thither is the Troglodites myrrhe brought, and there laid vp. Before this hauen, there lie in the sea two Islands, named Pseudopylæ: and as many farther within, called Pylæ: in the one of them be certaine pillers of stones, ingrauen with strange and vnknowne Letters. When you are past this hauen, you come to an arme of the sea called Abalites: within it is the Island Diodori, and other lying desart and vnpeopled. Also along the continent, there is much wildernesse: but being past them, you come to the towne Gaza: the promontorie also & port Mossylites, vnto which store of cynamon and canell is brought. Thus far marched K. *Sesostris* with his army. Some writers make mention of one town more in Æthiopia beyond all this, vpon the sea side, called Baradaza. K. *Iuba* would haue the Atlantick sea to begin at the promontorie or cape aboue-named, Mossylites: on which sea (as he saith) a man may saile very well with a West-north-west winde, by the coasts of his kingdomes of Mauritania or Marocco, as farre as to the coasts of Gibralter called Gades: and sure he speaketh so confidently thereof, as I will not altogether disredit his resolution in this behalfe. From a promontorie of the Indians called Lepteacra, and by others Drepanum, vnto the Isle of Malchu, hee saith plainely, that by a straight and direct course it is 15 hundred miles, and neuer reckon those parts that are burnt with the Sun. From thence to a place called Sceneos, he affirmeth it is 225 miles: and from it to the Island Sadanum, 150 miles; and thus by this means he concludeth, that in all, to the open and knowne sea, it is 1885 miles. But all other writers besides him were of opinion, that there could not possibly be any sailing vpon it, for the exceeding heat of the Sun. Ouer and besides, the Arabians named Ascitæ, doe much harme and annoyance from out of the Islands which they hold, vnto merchants that trafficke that way: for these Arabians, according as their name doth import, couple bottles made of good oxe leather, two by two together, and going vpon them with ease as it were a bridge vnder them, scoure the seas, and shooting their empoysoned arrowes, practise pyracie, to the great losse and mischiefe of merchants & sailers. The same *Iuba* writeth moreouer, that there be certaine people of the Troglodites, named Therothoes, for their hunting of wilde beasts, of their exceeding and wonderful swiftnesse in chasing of Deere vpon

vpon land: as the Ichthyophagi for coursing of fish in the sea, swimming as naturally as if they were water creatures. Moreouer, he nameth other nations in those parts, as the Bargeni, Zagenes, Chalybes, Saxinæ, Syreces, Daremes and Domazanes. Furthermore, he affirmeth, that the people inhabiting along the sides of Nilus from Syene vnto Meroe, are not Æthiopians, but Arabians, who for to seeke fresh water, approached Nilus; and there dwelt: as also that the citie of the Sunne, which we said before in the description of Ægypt, standeth not farre from Memphis, was first founded and built by the Arabians. Contrariwise, other Geographers there be, who affirme that the farther side or banke of Nilus is no part of Æthiopia, and they lay it as a dependant annexed to Affrick. But be it as will be, I wil not greatly busie my head thereabout, but suffer euery man to abound in his own sence, and haue his own way: only I will content my selfe with this, to set downe the townes on both sides thereof, in that order as they are declared vnto me. And first to begin with that side toward Arabia: after you are past Syene, enter you shall vpon the countrie of the Catadupi, and so forward into the land of the Syenites. Wherin these towns stand in order as followes: Tacompson, which some haue called Thatire, Aranium, Sesanium, Sandura, Nasandum, Anadoma, Cumara, Beda and Bochiana, Leuphithorga, Tantarene, Machindira, Noa, Gophoa, Gystatæ, Megeda, Lea, Rhemnia, Nupsia, Direa, Patara, Bagada, Dumana, Rhadata, wherein a golden cat is worshipded as a god. Boron in the midland part of the continent, and Mallos, the next towne to Meroe. Thus hath *Bion* digested and set them downe. But king *Iuba* hath raunged them otherwise in this manner. First, Megatichos a towne scituate vpon a hill betweene Ægypt and Æthiopia, which the Arabians vse to call Mypson: next to it Tacompson: then Aranium, Sesanium, Pide, Mamuda, and Corambis; neere vnto it a fountaine of liquid Bitumen: Hammodara, Prosda, Parenta, Mama, Thessara, Gallæ, Zoton, Graucome, Emeum, Pidibotæ, Hebdomecontacometæ, and the Nomades, who ordinarily are encamped vnder tents and pauilions. Cyste, Pemma, Gadagale, Palois, Primmis, Nupsis, Daselis, Patis, Gambrenes, Magases, Segasmala, Cranda, Denna, Cadeuma, Thena, Batha, Alana, Macum, Scammos, and Gora within an Island. Beyond which, Abala, Androcanis, Seres, Mallos & Agoce. And thus much on the side of Arabia. Now for Affrick side, they are in this wise reckoned. First, Tacompsos, according to the others name, or a parcell rather of the former: then, Magora, Sea, Edosa, Pelenaria, Pyndis, Maguса, Bauma, Linitima, Spyntuma, Sydopta, Gensoa, Pindicitora, Eugo, Orsima, Suasa, Maunia, Rhuma, Vrbubuma, Mulona, which town the Greeks were wont to call, Hypaton, Pagoargas, Zanones, & there begin the Elephants to come in; Mambia, Berresa, Cetuma. There was moreouer a towne sometime named Epis, scituate against Meroe: but rased it was and vtterly destroyed before that *Bion* wrote his Geography. See what cities and towns of name were recorded in times past to haue bin in those parts, vntil you come to the Isle Meroe. And yet at this day there is neither stick nor stone to be found of any of them in a manner on neither side. Only desarts and a vast wildernesse in stead of them, by report made vnto *Nero* the Emperor by the Prætorian souldiers, sent thither from him vnder the leading of a Tribune or Colonel, to discouer those quarters of Æthiopia, & to relate accordingly: at what time as among other his designes, that Prince intended an expedition with his army against the Æthiopians. And yet before his time, euen in the daies of *Augustus Cæsar* of happie memory, the Romanes pierced thither with a power of armed men vnder the conduct of *Pub. Petronius*, a knight of Rome, and gouernour of Ægypt, deputed by the said Emperour. Where he forced by assault and conquered all those townes in Æthiopia which he then found standing in this order following: namely, Pselcis, Primis, Abaccis, Phthuris, Cambusis, Attena, Stadisis, where the riuer Nilus runs down with such a mighty fall, that with the noise thereof the inhabitants there by lose their hearing and become deafe. Besides these he won also and sacked Napata. And albeit he marched forward still a great way into the countrie, euen 870 miles beyond Syene, yet this Romane armie of his laid not all wast in those parts, & left the country so desart as now it is. No, no: It was the Ægyptians warres and not the Romanes that gaue the wast to Æthiopia: and albeit sometimes it woon and otherwhiles lost; one time bare the sceptre and ruled, another time vnderwent the yoke, and were subdued: yet was it of great name in the world and puissant, vntill the reigne of king *Memnon*, who ruled at the time of the Trojane war: yea, and Syria was subject vnto it, as also the coast of our sea in king *Cephas* daies, as appeareth by the fabulous tales that go as touching *Andromeda*. Semblably the Geographers varie and disagree much about the measure and dimension of Æthiopia. And first of al others, *Dalion*, albeit

beit he passed far beyond Meroe: after him, *Aristocreon*, *Bion*, and *Basilis*. As for *Simonides* (the
yonger and the later writer) had soiourned the Meroe fiue yeares, when he wrote of Æthiopia.
For *Timosthenes* the Admirall of *Ptolomæus Philadelphus* his naue, hath left in record, that from
Syene to Meroe is 60 days iourny, without any further particularizing of the measure by miles.
But *Eratosthenes* precisely noteth, that it is 625 miles. *Artemidorus* but 600. *Schostus* affirmeth,
That from the frontiers of Egypt it is 1675 miles. From whence, the last rehearsed Writers
count forward but 1270. But all this difference and dispute about this point, is lately determi-
ned & ended by the report of those trauellers whom *Nero* sent of purpose to discouer those
countries; & they made relation of the truth vpon their certain knowledge, that it is 874 miles
from Syene in this maner particularly by iournies. Namely, from the said Syene to Hiera-Sy-
caminon 54 miles: from thence to Tama 75 miles: from Tama to the Euonymites country, the
first of all the Æthiopians, 120. Forward to Acina 54. To Pitara 25. To Tergedum 106 miles.
Where by the way it is to be noted, that in the midst of this tract lieth the Island Gagandus:
where they began first to haue a sight of the birds called Parats; & beyond another Isle in the
same way which is called Artigula, they might see monkies & marmosets: but being once be-
yond Tergedum, they met with the beasts Cynocephali. From thence to Napata 80 miles: this
is the only little town among all the rest before named. From which to the Island Meroe is 360
miles. They reported moreouer, that about Meroe (& not before) the grasse and herbs appeared
fresh and green; yea, and the woods shewed somwhat in comparison of all the way besides, and
that they espied the tracts of Elephants & Rhinocerotes where they had gone. As for the town
it selfe Meroe, they said it was within the Isle from the very entrie therof 70 miles: & that iust
by, there was another Island called Tatu, which yeelded a bay or hauen to land at for them that
took the arme & channell of Nilus on the right hand. As for the building within Meroe, there
were but few houses in it: that the isle was subiect to a lady orqueen named *Candace*, a name that
for many yeres already went from one queen to another successiuely. Within this town there is
the temple of great holinesse and deuotion in the honor of *Iupiter Hammon*: and in all that tract
many other chappels. Finally, so long as the Ethyopians swaied the scepter and raigned, this I-
sland was much renowned & very famous. For by report, they were wont to furnish the Ethyo-
pian king with armed men 250000, & to maintain of Artisans 400000. Last of all there haue
bin counted 45 kings of the Ethyopians, and so it is reported at this day.

CHAP. XXX.

¶ *The manifold, strange, and wonderfull formes and shapes of men.*

ALl Ethyopia in generall was in old time called Ætheria: afterwards Atlantia: and finally
of *Vulcans* son *Æthiops*, it took the name Ethyopia. No wonder it is, that about the coasts
thereof there be found both men and beasts of strange and monstrous shapes, considering
the agilitie of the suns fierie heat, so strong and powerfull in those countries, which is able to
frame bodies artificially of sundry proportions, and to imprint and graue in them diuers forms.
Certes, reported it is, that far within the country Eastward there are a kinde of people without
any nose at all on their face, hauing their visage all plain and flat. Others again without any vp-
per lip, and some tongueleesse. Moreouer, there is a kind of them that want a mouth, framed a-
part from their nose-thrils: and at one and the same hole, and no more, taketh in breath, recei-
ueth drinke by drawing it in with an oaten straw; yea, and after the same maner feed themselues
with the grains of oats, growing on the own accord without mans labour and tillage, for their
only food. And others there be, who in stead of speech and words, make signes, as well with nod-
ding their heads, as mouing their other members. There are also among them, that before the
time of *Ptolomæus Lathyrus* king of Egypt, knew no vse at all of fire. Furthermore, writers there
be, who haue reported, that in the countrey neere vnto the meeres and marishes from whence
Nilus issueth, there inhabit those little dwarfes called Pygmei. But to return againe to the vt-
most coasts of Ethyopia, where we left: there is a continuall raunge and course of mountains all
red like fire, as if they were euer burning. Moreouer, beyond Meroe there is a countrey lying a-
boue the Troglodites and the red sea: where, after you be three daies journy from Napata tow-
ard the coast of the said red sea, you shall find that in most places they saue raine water for their
ordinarie vse to drinke, and otherwise: all the countrey betweene is very plenteous and full
of

A of gold mines. All beyond this region is inhabited by the Atabuli, a people also of Ethiopia.
As for the Megabares, whom some haue named Adiabares, they lie against Meroe, and haue a
towne bearing the name of *Apollo*. Among them are certain Nomades encamping vnder tents
and tabernacles, who liue of Elephants flesh. Iust against them in a part of Africke are the long
liuing Macrobians. Again, being past the Megabarenes, you come vnto the Memnones & Da-
veli: & 20 daies iourny from them, to the Critenses. Beyond whom you meet with the Dochi,
and the Gymnetes who are euer naked. Soon after you shall find the Anderæ, Mathitæ, Mesa-
gebes, Hipporeæ, who be all ouer blacke, and therfore they colour and paint their bodies with
a kind of red chalk or rudle called Rubrica. But vpon the coast of Africk are the Medimni. Be-
yond whom you shal come to another sort of Nomades liuing vnder tents, who feed of no other
B thing but the milk of certain creatures headed like dogs, called Cynocephali: also to the Olabi
and Syrbotæ, who are reported to be 8 cubits high. Moreouer, *Aristocreon* saith, that on Libya
side, fiue daies iourny from Meroe, there is a town called Tole: & 12 daies iourny from thence,
there standeth Esar, a town built by the Egyptians, who fled thither to auoid the cruelty and
tyrannie of K. *Psammeticus*. And reported it is, that the Egyptians held it for 300 yeres. Also,
that the same fugitiues founded the towne Daron on the contrary side in the coast of Arabia.
But that which *Aristocreon* nameth Esar, *Bion* called Sapa, and saith withall, that the very word
Sapa signifieth in the Ethyopian language, strangers or aliens come from other parts. Hee af-
firmeth besides, that their capitall city is within an Island, Semberritis, and that Sai within A-
rabia, is the third city of that nation. Now between the mountains and the riuer Nilus, are the
Symbarians and the Phalanges: but vpon the very hils liue the Asachæ, who haue many other
C nations vnder them: and they are by report seuen daies iourney from the sea. They liue vpon
the venison of Elephants flesh, which they vse commonly to hunt and chase. As for the Island
within Nilus, of the Semberrites, it is subiect to a queen. And eight daies iourney from thence
lieth the country of the Ethiopians, named Nubæi. Their chiefe town Tenupsis is seated vpon
the riuer Nilus. Beyond the Nubians, you enter vpon the countrie of the Sambri: where all the
foure-footed beasts, yea, euen the very Elephants, are without ears. Vpon the coast of Africk in-
habit the Ptœambati and Ptœmphanæ: who haue a dog for their king, and him they obey, ac-
cording to the signes which he maketh by mouing the parts of his bodie, which they take to
be his commandements, and religiously they do obserue them. Their head citie is Aurispi, far
distant from Nilus. Beyond them are the Achisarmi, Phaliges, Marigeri, and Casamarri. *Bion*
D affirmeth, That beyond Psembobitis, there be other townes in the Islands of that coast, toward
Meroe, all the way as you passe for 20 daies iourny. The towne of the next Island is Semberri-
tarum, vnder the queen: likewise another called Asar. Also there is a second Island hauing in
it the towne Daron: a third which they cal Medœ, wherein standeth the town Asel: and a fourth
named Garode, like as the towne also. Then along the banks of Nilus are many townes, to wit,
Navos, Modunda, Andabis, Setundum, Colligat, Secande, Navectabe, Cumi, Agrospi, Ægipa,
Candrogari, Araba, and Summara. The region aboue Sirbithim, where the mountains do end,
is reported to haue vpon the sea coast certaine Æthyopians called Nisicastes and Nisites, that
is to say, men with three or foure eies apiece: not for that they are so eied indeed, but because
E they are excellent archers, & haue a speciall good eie in aiming at their marke, which lightly
they wil not misse. *Bion* affirmeth moreouer, That from that clime of the heauen which beares
aboue the greater Syrtes, & bendeth toward the South Ocean sea, they be called Dalion, to
wit, the Ciforians and Longopores, who drinke and vse rain water only. And beyond Oecalices
for fiue daies iournie, the Visbalks, Isuelians, Pharuseans, Valians and Cispians. All the rest are
nothing but desarts not inhabited. But then he telleth fabulous and incredible tales of those
countries. Namely, that Westward there are people called Nigroe, whose king hath but one
eie, and that in the mids of his forehead. Also he talketh of the Agriophagi, who liue most of
panthers and lions flesh. Likewise of the Pomphagi, who eat all things whatsoeuer. Moreouer,
of the Anthropophagi, that feed on mans flesh. Furthermore, of the Cynamolgi, who haue
F heads like dogs. Ouer and besides, the Artabatites who wander and go vp and downe in the fo-
rests like fourefooted sauage beasts. Beyond whom, as he saith, be the Helperij, & Peroesi, who,
as we said before, were planted in the confines of Mauritania. In certain parts also of Ethyopia
the people liue of Locusts only, which they pouder with salt, and hang vp in smoke to harden,
for their yerely prouision, and these liue not aboue 40 yeares at the most. Finally, *Agrippa* saith

that all Ethiopia, and take the land with it of *Prester Iehan* bordering vpon the red sea, containeth in length 2170 miles: & in bredth, together with the higher Egypt, 1291. Some Geographers haue taken the bredth in this manner. From Miroe to Sirbitum, 12 daies iournie vpon Nilus: from thence to the country of the Dauillians another 12, and from them to the Ethyopian Ocean 6 daies. But in general all writers in a manner do resolue vpon this, that betweene Ocean and Meroe, it is 725 miles: and from thence to Syene, as much as we haue set downe before. As for the posture and scituation of Ethyopia, it lies Southeast & Southwest. In the meridian South parts thereof, there be great woods of Ebene especially, alwaies greene. Toward the mids of this region, there is a mighty high mountain looking ouer the sea, that burns continually, which the Greeks cal Theon ochema, *i.* The chariot of the gods: from the which it is counted foure daies iourny by sea to the promontory or cape called Hesperion-Ceras, which confines vpon Africk, neere to the Hesperian Ethyopians. Some writers hold, that this tract is beautified with pretty little hils, and those pleasantly clad & garnished with shadowie groues, wherein the Ægipanes, and Satyres do conuerse.

Capde bonne Esperance

Chap. XXXI. *The Islands in the Æthyopian Sea.*

Ephorus, Eudoxus, and *Timosthenes*, do all agree in this, that there be very many Islands in all that sea. *Cliarchus* witnesseth, that report was made to *Alexander* the Great, of one aboue the rest, which was so rich and well monied, that for an ordinary horse the inhabitants would not stick to giue a talent of gold: also of another, wherein was found a sacred hill adorned with a goodly wood vpon it, where the trees distilled and dropped sweet water of a wonderfull odoriferous smell. Moreouer, full against the Persian gulf, lieth the Isle named Cerne, opposite vnto Æthiopia, but how large it is, or how far off it beareth into the sea from the continent, is not certainly knowne: this only is reported, that the Ethyopians and none but they, are the inhabitants therof. *Ephorus* writeth, that they who would saile thither from the red sea, are not able for extreme heate to passe beyond certain columnes or pillars, for so they call the little Isles there. Howbeit *Polybius* auoucheth, that this Island Cerne where it lieth in the vtmost coast of the Mauritanian sea ouer-against the mountaine Atlas, is but 8 stadia from the land. And *Cornelius Nepos* affirmeth, that likewise it is not aboue a mile from the land, ouer against Carthage: & besides, that it is not aboue two miles in circuit. There is mention made also by authors, of anorher Isle before the said mountain Atlas, named also therupon Atlantis. And fiue daies sailing from it, appeare the desarts of the Ethyopian Hesperians, together with the foresaid cape, which we named Hesperion-Ceras, where the coasts of the land begin first to turn about their forefront to wind Westward, and regard the Atlanticke sea. Iust ouer-against this cape, as *Xenophon Lampsacenus* reporteth, lye the Islands called Gorgates, where sometimes the Gorgones kept their habitation, and 2 daies sailing they are thought to be from the firme land. *Hanno*, a great commander and generall of the Carthaginians, landed there with an army: who made this report from thence, That the women were all ouer their bodies hairy: as for the men, he could not catch one of them, so swift they were of foot that they escaped out of all sight: but he flead two of these Gorgone women and brought away their skins, which for a testimoniall of his being there, and for a wonder to posteritie, he hung vp in *Iunoes* temple, where they were seen vntill Carthage was won and sacked. Beyond these Isles, there are by report, two more discouered, by the name of Hesperides. But so vncertaine are all the intelligences deliuered concerning these parts, that *Statius Sebosus* affirmeth, that it is 40 good daies sailing from the Islands of these Gorgones along the coast of Atlas, vnto the Isles of the Hesperides; and from thence to Hesperion-Ceras, but one. As little resolution and certaintie there is, as touching the Islands of Mauritania. In this only they all jumpe and accord, that K. *Iuba* discouered some few of them ouer-against the Autolotes, in which he meant and purposed to die Gætulian purple.

Chap. XXXII.

¶ *Of the Islands Fortunatæ, or Canarie.*

Some Authors there be who thinke, that the Islands Fortunatæ, and certaine others besides them, are beyond the Antolotes: among whom, the same *Sebosus* aboue rehearsed was so bold, as to speake of their distances: and namely, that the Island Iunonia is from Gades 750 miles:

750 miles: and that from it Westward, the Isles Pluvialia and Capraria, are as much. Also that in the Island Pluvialia there is no fresh water, but only that which they haue by showrs of rain. He saith moreouer, that from them to the Fortunate Islands are 250 miles; which lie 8 miles from the coast of Mauritania to the left hand, called the coast of the Sun, or Valley of the sun, for that it is like a valley or hollow leuell flore of earth, whereupon also it is called Planaria, resembling an euen plain. And in very truth, this vally containeth in circuit 300 miles: wherein are trees to be seen that grow vp in height to 144 foot. As for the Islands named Fortunatæ, *Iuba* learned thus much by diligent inquisition, that they lie from the South-neere to the West 625 miles from the Islands Purpurariæ, where they die purple; so as to come thither, a man must saile 250 miles aboue the West, and then for 75 miles more bend his course Eastward: he saith also, that the first of these Islands is called Ombrion, wherein ate to be seen no token or shew at all of houses. Also that among the mountains, it hath a lake or meere: and trees resembling the plant Ferula, out of which they presse water: that which issueth out of the black trees of that kinde, is bitter; but out of the whiter sort, sweet and potable. As for a second, he writeth that it is named Iunonia, wherein there is one little house or chappell made of stone: beyond it, but neere by, there is a third of the same name, but lesse than the other: and then you come to a fourth called Capraria, full of great Lizards. Within a kenning from these, lyeth the Island Niuaria, which tooke this name of the snow that lieth there continually, and besides, it is full of mists and fogs. The next to it and the last of all, is Canaria, so called, by reason of a number of dogs of mighty bigneſſe; of which K. *Iuba* brought away two; & in this Island there are some marks remaining of buildings which giue testimonie that somtime it was inhabited and peopled. And as all these Islands generally do abound plentifully in fruitfull trees, & flying fouls of all sorts: so this aboue the rest named Canaria, is repleniſhed with rowes of date trees that beare abundance of dates, and likewise with pine trees that yeeld store of Pine nuts. Furthermore he affirmeth, that there is great plenty of hony in it: that the riuers therein are well stored with fish, and the Sturgeon especially: in which there groweth the red Papyrus as ordinarily as in Nilus. Howbeit in conclusion he saith, that these Isles are much annoied with great whales and such monsters of the sea, that daily are cast vpon the shore, which lie aboue ground & putrifie like carrion. Thus hauing at large gone through the description of the globe of the earth as well without as within, it remaineth now to knit vp briefely with the measure and compasse of the seas.

Chap. XXXIII.

¶ *A summarie of the earth, digested according to the dimensions thereof.*

Polybius saith, that from the streights of Gibralter, vnto the very mouth and firth of Mœotis, it is found by a direct and straight course to be 3437 miles and an halfe. Begin there again, and hold on a right course Eastward to Sicily, it is 1260 miles and an halfe. From thence forward to the Island Creta, 375 miles: forward to Rhodes, 146 miles and an halfe: to the Chelidoniæ Isles as much, and so to Cyprus 325 miles: from whence to Seleucia Pieria in Syria 115 miles. Which particulars being laid together, make by computation the grosse sum of 2340 miles. Howbeit, *Agrippa* counteth 3440 miles for all this distance aboue-said, beginning at the straits of Gibraltar aboue-said, and carrying the length straight forward to the gulf of Issa. In which reckoning of his I wot not whether ther be an error in the number, forasmuch as the same writer hath set down from the streit of Messine in Sicilie to Alexandria in Egypt, 1250 miles. As for the whole circuit that may be comprehending therein, all the gulfes and creekes before-named, from the same point where we first began, as far as to the lake Mœotis, is 15600 miles. *Artemidorus* addeth thereto 756 miles. And the same Geographer writeth, that take the lake Mœotis to the rest, all commeth to 17390 miles. Loe, what the measure is of the seas taken by Philosophers and learned men, without armor and weapon in hand; of men I say, who haue not feared to hazard themselues boldly and prouoke Fortune, in trauersing the seas so farre off. Now are we to compare respectiuely the greatnesse of each part of the world in seuerall: notwithstanding that I shall finde much ado and difficulty enough therein, considering the disagreement of authors in that behalf. But most plainly shal this appeare which we seek for, by ioining longitude & latitude together: acording to which prescript rule to begin with

Europe, it may wel contain in largenes 8148 miles. Africk (taking the middle and mean computation between them all that haue set it down) containeth in length 3748 miles. As for the bredth of so much as is known and inhabited, in no place where it is wideſt exceedeth it 250 miles. True it is, that *Agrippa* would haue it to contain 910 miles in breadth, beginning at the bounds of Cyrene, and ſo comprehending in this meaſure the deſarts thereof as far as to the Garamants, ſo far as is knowne and diſcouered, and then the whole meaſure collected into one generall ſum, amounteth to 4608 miles. As for Aſia, confeſſed it is and reſolued vpon by all Geographers, that in length it carrieth 63750 miles: and verily in bredth (if you account from the Æthiopian ſea to Alexandria ſcituate vpon Nilus, ſo as your meaſure run through Meroe and Syrene) it taketh 1875 miles: wherby it appeareth euidently, that Europe is little wanting of halfe as big again as Aſia: and the ſame Europa, is twiſe as much again as all Africa & a ſixt part ouer. Reduce now all theſe ſums together, it wil be found cleare, that Europ is a third part of the whole earth, & an eight portion ouer and ſomwhat more: Aſia, a fourth part, with an ouerdeale of 14: and Africk a fifth part, with an ouer-plus of a ſixtieth portion. To this calculation, we wil ſet to, as it were to boot, one ſubtill deuiſe & inuention more of the Greeks, which ſheweth their ſingular wit (to the end we ſhould omit nothing that may ſerue our turn in this Geographie of ours) and that is this: after that the poſiture and ſite of euery region is knowne and ſet downe, how a man may likewiſe come to the knowledge what ſocietie and agreement there is between the one & the other, either by length of daies and nights, by the ſhadow at noon day, or by equality of climats of the world. To bring this about effectually, I muſt part and digeſt the whole earth into certain ſections or euen portions, anſwerable to thoſe in heauen; whereof there be very many) which our Aſtronomers and Mathematicians cal Circles; but the Greeks, Parallels.

Chap. XXXIV.

¶ *The diuiſion of the earth into Climates or lines Parallele, and equall ſhadowes.*

FOr to make an equall partition of the world, begin we wil at the Meridionall Indians, & go directly as far as Arabia, and the inhabitants of the red ſea. Vnder this climat are compriſed the Gedroſians, Perſians, Carmanes, and Elimæans: Parthyene, Aria, Suſiane, Meſopotomia, Seleucia ſyrnamed Babylonia, Arabia, ſo far as Petræ incluſiuely, Cœle-Syria, & Peluſium in Egypt: the low Low-countries, which are called the tract of Alexandria: the maritime coaſts of Africk: all the towns of Cyrenaica, Thapſus, Adrumetum, Clupea, Carthage, Vtica, both Hippoes, Numidia, both realmes of Mauritania, the Atlanticke ſea, and *Hercules* pillars. In all the circumference of this climat and parellele, at noon tide vpon an Equinoctiall day, the ſtile in the diall which they call Gnomon 7 foot long, caſteth a ſhadow not aboue 4 foot. The longeſt night or day in this climate, is 14 houres: and contrariwiſe the ſhorteſt, ten. The ſecond circle or parallele line, beginneth at the Indians Occidentall, and paſſeth through the mids of Parthia, Perſepolis, the hithermoſt parts of Perſis (in reſpect of Rome) the hither coaſt of Arabia, Iudæa, and the borders neere vnto the mountaine Libanus. Vnder the ſame are contained alſo Babylon, Idumæa, Samaria, Hieruſalem, Aſcalon, Ioppe, Cæſarea, Phœnice, Ptolemais, Sydon, Tyrus, Berytrus, Botrys, Tripolis, Byblus, Antiochia, Laodicea, Seleucia, the Sea coaſts of Cilicia, Cyprus, the South part of Candy, Lilybæum in Sicilia, the North parts of Africke and Numidia. The Gnomon in a diall vpon the Equinoctiall day 35 foot of length, maketh a ſhadow 24 foot long. The longeſt day or night is 14 houres Equinoctial, and the fift part of an houre. The third circle beginneth at the Indians next vnto the mountaine Imaus, and goeth by the Caſpian gates or ſtreights hard by Media, Cataonia. Cappadocia, Taurus, Amanus, Iſſus, the Cilician ſtraits, Soli, Tarſus, Cyprus, Piſidia, Syde in Pamphilia, Lycaonia, Patara in Lycia, Xanthus, Caunus, Rhodus, Cous, Halicarnaſſus, Gnidus, Doris, Chius, Delus, the mids of the Cyclades. Gytthium, Malea, Argos, Laconia, Elis, Olympia, Meſſene, Peloponneſus, Syracuſa, Carine, the mids of Sicily, the South part of Sardinia, Cardei, and Gades. In this clime the Gnomon of 100 inches, yeeldeth a ſhadow of 77 inches. The longeſt day hath Equinoctiall houres 14 & an halfe, with a 30 part ouer. Vnder the fourth circle or parallele lye they that are on the other ſide of Imaus, the South parts of Cappadocia, Galatia, Myſia, Sardis,

A Sardis, Smyrna, Sipylus, the mountaine Tmolus in Lydia, Caria, Ionia, Trallis, Colophon, Epheſus, Miletus, Samos, Chios, the Icarian ſea, the Iſles Cyclades lying Northward, Athens, Megara, Corinth, Sicyon, Achæa, Patræ, Iſthmos, Epirus, the North parts of Sicily, * Narbonenſis Gallia toward the Eaſt, the maritime parts of Spaine beyond new Carthage, and ſo into the Weſt. To a Gnomon of 21 foot, the ſhadowes anſwer of 17 foot. The longeſt day is fourteen Æquinoctiall houres, and two third parts of an houre. The 5 diuiſion containeth vnder it, from the entrance of the Caſpian ſea, Bactra, Iberia, Armenia, Myſia, Phrygia, Helleſpontus, Troas, Tenedus, Abydus, Scepſis, Ilium, the hill Ida, Cyzicum, Lampſacum, Sinope, Aniſum, Heraclea in Pontus, Paphlagonia, Lemnus, Imbrus, Thaſus, Caſſandria, Theſſalia, Macedonia, Lariſſa, Amphipolis, Theſſalonice, Pella, Edeſſa, Berœa, Pharſaliæ, Caryſtum, Eubœa, Bœotia, B Chalcis, Delphi, Acarnania, Ætolia, Apollonia, Brundiſium, Tarentum, Thurij, Locri, Rhegium, Lucani, Naples, Puteoli, the Tuſcan ſea, Corſica, the Baleare Iſles, the middle of Spain. A Gnomon of 7 foot giueth ſhadow ſix foot. The longeſt day is 15 Æquinoctiall houres. The ſixt paralell compriſeth the city of Rome, and containeth withall the Caſpian nations, Caucaſus, the North parts of Armenia, Apollonia vpon Rhindacus, Nicomedia, Nicæa, Chalcedon, Bizantium, Lyſimachia, Cherrhoneſus, the gulfe Melane, Abdera, Samothracia, Maronea, Ænus, Beſſica, the midland parts of Thracia, Pœonia, the Illyrians, Dyrrhachium, Canuſium, the vtmoſt coaſts of Apulia, Campania, Hetruria, Piſæ, Luna, Luca, Genua, Liguria, Antipolis, Maſſilia, Narbon, Tarracon, the middle of Spain called Tarraconenſis, & ſo through Luſitania. C To a Gnomon of 9 foot, the ſhadow is anſwerable 8 foot. The longeſt day hath 15 Æquinoctiall houres, and the 9 part of an houre, or the fift, as *Nigidius* is of opinion. The 7 diuiſion begins at the other coaſt of the Caſpian ſea, and falls vpon Callatis, Boſphorus, Boryſthenes, Tomos, the backe parts of Thracia, the Tribals country, the reſt of Illyricum, the Adriaticke ſea, Aquileia, Altinum, Venice. Viceria, Patavium, Verona, Cremona, Ravenna, Ancona, Picenum, Marſi, Peligni, Sabini, Vmbria, Ariminium, Bononia, Placentia, Mediolanum, and all beyond Apenninum: alſo ouer the Alps, Aquitane in Gaule, Vienna, Pyræneum, and Celtiberia. The Gnomon of 35 foot, caſteth a ſhadow 36 foot in length; yet ſo, as in ſome part of the Venetian territorie, the ſhadow is equall to the Gnomon. The longeſt day is 15 Æquinoctiall houres, and three fift parts of an houre. Hitherto haue we reported the labors in this point of antient D Geographers, and what they haue reported. But the moſt diligent and exacteſt modern Writers that followed, haue aſſigned the reſt of the earth not yet ſpecified, to three other ſections or climats. The firſt, from Tanais through the lake Mœtis and the Sarmatians, vnto Boryſthenes, and ſoby the Dakes and a part of Germany, containing therein France and the coaſts of the Ocean, where the day is 16 houres long. A ſecond, through the Hyperboreans and Britain, where the day is 17 houres long. Laſt of all is the Scythian paralell, from the Rhiphæan hills into Thule: wherein (as we ſaid) it is day and night continually by turnes, for ſixe moneths. The ſame writers haue ſet downe two paralell circles, before thoſe points where the other began, and which we ſet downe. The one through the Iſlands Meroe and Ptolemais vpon the red ſea, built for the hunting of Elephants, where the longeſt daies are but 12 houres and an halfe: E the ſecond paſſing through Syrene in Ægypt, where the day hath 13 houres. And the ſame authors haue put to euery one of the other circles, euen to the very laſt, half an houre more to the daies length than the old Geographers.

* Languedoc.

Thus much of the Earth.



THE

THE SEVENTH BOOKE OF THE HISTORIE OF NATVRE,

WRITTEN BY C. PLINIVS SECVNDVS.

The Proeme.

THus, as you see, we haue in the former bookes sufficiently treated of the vniuersall world; of the Lands, Regions, Nations, Seas, Ilands, and renowned Cities therein contained. It remaines now to discourse of the liuing creatures comprised within the same, and their natures: a point doubtlesse that would require as deepe a speculation as any part else thereof whatsoeuer, if so be the spirit and minde of man were able to comprehend and compasse all things in the world. And to make a good entrance into this treatise and history, me thinkes of right we ought to begin at Man, for whose sake it should seeme that Nature made and produced all other creatures besides: though this great fauour of hers, so bountifull and beneficiall in that respect, hath cost them full deare. Insomuch as it is hard to iudge, whether in so doing she hath done the part of a kinde mother, or a hard and cruell step-Dame. For first and formost, of all other liuing creatures, man she hath brought forth all naked, and cloathed him with the good and riches of others. To all the rest she hath giuen sufficient to clad them euery one according to their kinde; as namely, shells, cods, hard hides, prickes, shag, bristles, haire, downe feathers, quills, skales, and fleeces of woull. The very trunkes and stems of trees and plants she hath defended with barke and rinde, yea and the same sometimes double, against the iniuries of heate and cold: Man alone, poore wretch, she hath layed all naked vpon the bare earth, euen on his birth day, to cry and wraule presently from the very first houre that hee is borne in such sort, as among so many liuing creatures there is none subiect to shed teares and weepe like him. And verily to no babe or infant is it giuen once to laugh before he be forty daies old, and that is counted very early, and with the soonest. Moreouer, so soone as he is entred in this manner to enioy the light of the Sunne, see how he is immediatly tyed and bound fast, and hath no member at libertie: a thing that is not practised vpon the yong whelpes of any beast among vs, be he neuer so wilde. The childe of man thus vntowardly borne, and who another day is to rule and command all other, loe how he lieth bound hand and foot, weeping and crying, and beginning his life in miserie, as if he were to make amends and satisfaction by his punishment vnto Nature, for this onely fault and trespasse, that he is borne aliue. O folly of all follies, euer to thinke (considering this simple beginning of ours) that we were sent into this world to liue in pride, and cary our heads aloft! The first hope that we conceiue of our strength, the first gift that Time affourdeth vs, maketh vs no better yet than foure-footed beasts. How long is it ere we can go alone? how long before we can prattle and speake, feed our selues, and chew our meat stroungly? what a while continueth the mould and crowne of our heads to beate and pant, before our braine is well settled; the vndoubted marke and token that bewraieth our exceeding great weakenesse aboue all other creatures? What should I say of the infirmities and sicknesses that do soone seaze vpon our feeble bodies? what need I speake of so many medicines and remedies deuised against these maladies: besides the new diseases that come euery day, able to checke and frustrate all our prouision of physicke whatsoeuer? As for all other liuing creatures, there is not one, but by a secret instinct of nature knoweth his owne good, and wherto he is made able; some make vse of their swift feet, others of their slight wings; some are strong of limme; others are apt to swim, and practise the same: man only knoweth nothing vnlesse he be taught; hee can neither speake, nor goe, nor eate, otherwise than he is trained to it: and to be short, apt and good at nothing he is naturally, but to pule and cry. And hereupon it is, that some haue beene of this opinion,

A opinion, That better it had been, and simply best for a man, neuer to haue been borne, or else speedily to die. None but we doe sorrow and waile, none but we are giuen to excesse and superfluitie infinitely in euery thing, and shew the same in euery member that we haue. Who but we againe are ambitious and vain-glorious? who but we are couetous and greedie of gathering good? we and none but we desire to liue long and neuer to die, are superstitious, carefull of our sepulture and buriall, yea and what shall betide vs when we are gone. Mans life is most fraile of all others; and in least securitie he liueth: no creature lusteth more after euery thing than he: none feareth like vnto him, and is more troubled and amazed in his fright: and if he beset once vpon anger, none more raging and wood than he. To conclud, all other liuing creatures liue orderly and well, after their owne kinde: we see them flocke and gather together, and ready to make head and stand against all others of a contrary kinde: the lyons as fell and sauage as they be, fight not one with another: serpents sting not serpents, nor bite one another with their venomous teeth: nay the very monsters and huge B fishes of the sea, war not among themselues in their owne kinde: but beleeue me, Man at mans hand receiueth most harme and mischiefe.

CHAP. I.

¶ *The strange and wondrous shapes of sundry nations.*

C IN our Cosmographie and reports of nations and countries, wee haue spoken in generall of all mankinde, spred ouer the face of the whole earth: neither is it our purpose at this present to decipher particularly all their customes and manners of life, which were a difficult enterprise, considering how infinit they be, and as many in manner as there be societies and assemblies of men. Howbeit I thinke it good, not to ouer-passe all, but to make relation of some things concerning those people especially, who liue farthest remote from our seas; among whom I doubt not but I shall find such matter, as to most men will seeme both prodigious and incredible. And verily who euer beleeued that the Æthiopians had bin so blacke, before he saw them with his eies: nay what is it, I pray you, that seemeth not a wonder at the first sight? How many things are judged impossible before they are seene done and effected? And certes, to speake a truth, The power and majestie of Nature, in euery particular action of hers & small things, seemeth incredible, if a man consider the same seuerally, and enter not into a generall conceit of D her wholly as she is. For to say nothing of the painted peacocks feathers, of the sundry spots of tygres, luzernes, and panthers, of the variable colours and markes of so many creatures besides: let vs come to one only point, which to speake of seemes but small, but being deepely weighed and considered, is a matter of exceeding great regard, and that is, The varietie of mens speech; so many tongues and diuers languages are amongst them in the world, that one stranger to another seemeth well-neere to be no man at all. But come to view and marke the variety that appeares in our face and visage, albeit there be not past ten parts or little more therin, see how among so many thousands as we are, you shall not find any two persons, who are not distinct in countenance and different one from another: a thing that no artificer nor painter (be he neuer so cunning and his craft finaster euery way) can performe, but in a few pictures, and take what E heed he can with all his curious affectation. And yet thus much must I aduertise the readers of this mine history by the way, that I will not pawne my credit for many things that herein I shall deliuer, nor bind them to beleeue all I write as touching strange and forrein nations: refer them rather I will to mine authors, whom in all points (more doubtfull than the rest) I will cite and alledge, whom they may beleeue if they list: onely let them not thinke much to follow the Greeke writers, who from time to time in this behalfe haue been more diligent in penning, and more curious in searching after antiquities.

CHAP. II.

¶ *Of the Scythians, and the diuersitie of other nations.*

THat there bee Scythians, yea, and many kindes of them that feed ordinarily of mans flesh, wee haue shewed alreadie in our former discourses. A report haply that would be thought incredible, if we did not consider and thinke withall, how in the very middle and heart of the world, euen in Sicily and Italy, here hard by, there haue beene such monsters of men,

men,namely,the Cyclopes and Lystrigones: nay, if we were not credibly informed, that euen of late daies,and go no farther than to the other side of the Alpes,there be those that kill men for sacrifice after the maner of those Scythian people;& that wants not much of chewing and eating their flesh. Moreouer,neere vnto those Scythians that inhabit toward the pole Articke, and not far from that climate which is vnder the very rising of the North-east wind,and about that famous caue or whole out of which that wind is said to issue,which place they call Gesclithron,[*i.*the cloister or key of the earth]the Arimaspians by report do dwel,who as we haue said before,are known by this marke,for hauing one eie only in the mids of their forehead:and these maintain war ordinarily about the mettall mines of gold, especially with griffons,a kind of wilde beasts that flie,and vse to fetch gold out of the veines of those mines(as commonly it is receiued:)which sauage beasts(as many authors haue recorded,and namely,*Herodotus* & *Aristeas* the Proconnesian,two writers of greatest name) striue as eagerly to keepe and hold those golden mines,as the Arimaspians to disseize them therof,and to get away the gold from them. Aboue those, are other Scythians called Anthropophagi,where is a countrie named Abarimon,within a certain vaile of the mountain Imaus,wherin are found sauage & wild men,liuing and conuersing vsually among the bruit beasts, who haue their feet growing backward,& turned behind the calues of their legs,howbeit they run most swiftly. These kinde of men can endure to liue in no other aire nor in any clime else than their own,which is the reason that they cannot be drawne to come vnto other kings that border vpon them, nor could be brought vnto *Alexander* the great:as *Beton* hath reported, the marshall of that princes campe,& who also put downe his gests and iournies in writing. The former Anthropophagi or eaters of mans flesh, whom we haue placed about the North-pole, ten daies iournie by land aboue the riuer Borysthenes,vse to drink out of the skuls of mens heads,and to weare the scalpes haire & al,in stead of mandellions or stomachers before their breasts, according as *Isogonus* the Nicean witnesses. The same writer affirmeth moreouer,That in Albanie there be a sort of people borne with eies like owles,whereof the sight is fire red:who from their childhood are grey headed,and can see better by night than day. He reporteth also,that tenne daies iourny beyond Borysthenes, the Sauramates neuer eat but one meale of meat in three daies. *Crates* of Pergamus saith, That in Hellespont about Parium there was a kind of men(whom he nameth Ophiogenes) that if one were stung with a serpent,with touching only,will ease the paine:and if they doe but lay their hands vpon the wound,are wont to draw forth all the venome out of the body. And *Varro* testifies,that euen at this day there be some there who warish & cure the stinging of serpents with their spittle,but there are but few such,as he saith. *Agatharcides* writes,that in Affrick the Psyllians (so called of king *Psyllus*, from whose race they were descended, and whose sepulchre or tombe is at this day present to be seene in a part of the greater Syrtes)could do the like. These men had naturally that in their own bodies,which like a deadly bane and poyson would kill al serpents: for the very aire & sent that breathed from them,was able to stupifie and strike them starke dead. And by this means they vsed to try the chastitie and honestie of their wiues. For so soon as they were deliuered of children,their manner was to expose and present the silly babes new borne,vnto the most fell and cruell serpents they could find: for if they were not right,but gotten in adultery,the said serpents would not auoid & fly from them. This nation verily in generall hath been defeated,& killed vp in manner all by the Nasamones, who now inhabit those parts wherin they dwelt:howbeit a kind remains still of them, descended from those that made shift away and fled,or else were not present at the said bloudy battell, but there are very few of them at this day left. The Marsians in Italy at this present continue with the like naturall vertue against serpents:whom being reputed for to haue descended from ladie *Circes* son,the people in this regard do highly esteem,& are verily persuaded,that they haue in them the same faculties by kinde. And what great wonder is this,considering that all men carry about them that which is poyson to serpents: for if it be true that is reported, they will no better abide the touching with mans spittle,than scalding water cast vpon them:but if it happen to light within their chawes,or mouth, especially if it come from a man that is fasting, it is present death. Beyond those Nasamones,and their neighbours confining vpon them (the Machlyes)there be found ordinarily Hermaphrodites,called Androgyni,of a double nature, and resembling both sexes,male and female,who haue carnal knowledge one of another interchangeably by turns,as *Calliphanes* reports. *Aristotle* saith moreouer,that on the right side of their breast they haue a little

tle teat or nipple like a man, but on the left they haue a full pap or dug like a woman. In the same Affricke,both *Isogonus* and *Nymphodorus* doe auouch, there be certain houses and families of sorcerers:who,if they chance to blesse,praise, and speak good words,bewitch presently withall; insomuch as sheepe therewith die,trees wither, and infants pine and winder away. *Isogonus* adds furthermore, That such like there be among the Triballians and Illyrians,who with their very eie sight can witch,yea,and kil those whom they look wistly vpon any long time,especially if they be angred, and that their eies bewray their anger: and more subiect to this daunger be men growne, than children vnder fourteene yeares of age. This also is in them more notable and to be obserued,that in either eie they haue two sights or apples. Of this kind and property, as *Apollonides* mine author saith,there be certaine women in Scythia named Bithyæ. *Philarchus* witnesseth,That in Pontus also the whole race of the Thibians, and many others besides,haue the same quality,& doe the like:and known they are(saith he)by these markes, In one of their eies they haue two sights,in the other the print or resemblance of an horse. He reports besides of these men, that they wil neuer sinke or drowne in the water, be they charged neuer so much with weighty and heauy apparel. Not vnlike to these there are a people in Æthiopia called Pharnaces;whose sweat if it chance to touch a mans body,presently he falleth into a phthisick or consumption of the lungs. And *Cicero* a Romane writer here among vs testifieth, that generally all women that haue such double apples in their eies, haue a venemous sight and doe hurt therewith. See how nature,hauing engraffed naturally in some men this vnkind appetite (like wild beasts) to feed commonly vpon the bowels and flesh of men, hath taken delight also & pleasure to giue them inbred poisons in their whol body,yea & venom in the very eies of some; that there should be no naughtinesse in the world againe, but the same might be found in man. Not farre from Rome city, within the territory of the Falisci,there be some few houses,& families called Hirpiæ, which at their solemne yearely sacrifice celebrated by them in the honour of *Apollo* vpon the mount Soracte, walke vpon the pile of wood as it is on fire,in great iolity,and neuer a whit are burnt withall. For which cause it is ordained by an expresse areſt or act of the Senat, that they should be priuiledged,and haue immunity of warfare and all other seruices whatsoeuer. Some men there be that haue certaine members and parts of their bodies naturally working strange and miraculous effects,and in some cases medicinable. As for example,king *Pyrrhus*,whose great toe of his right foot was good for them that had big, swelled, or indurate spleenes,if he did but touch the parties diseased, with that toe. And they say moreouer,that when the rest of his body was burnt (after the manner) in the funerall fire,that great toe the fire had no power to consume: so, that it was bestowed in a little case for the nones, and hung vp in the temple for a holy relique. But principally aboue all other countries, India and the whole tract of Æthiopia is full of these strange and miraculous things. And first & formost the beasts bred in India be very big, as it may appeare by their dogs, which for proportion are much greater than those in other parts. And trees grow there to that tallnesse, that a man cannot shoot a shaft ouer them. The reason hereof is the goodnesse and fatnesse of the ground,the temperat constitution of the aire,and the abundance of water: which is the cause also that vnder one fig tree[beleeue it that list]there may certaine troupes and squadrons of horsmen stand in couert,shaded with the boughes. And as for reeds, they be of such a length, that between euery ioint they will yeeld sufficient to make boats able to receiue three men apeece, for to row therein at ease. There are to be seene many men there aboue fiue cubits tall: neuer are they known once to spit:troubled they are not with pain in the head,tooth-ach, or griefe of the eies; and seldome or neuer complaine they of any sorance in other parts of the body, so hardy are they,and of so strong a constitution thorough the moderat heat of the Sun. Ouer and besides,among the Indians be certain Philosophers,whom they call Gymnosophists,who from the Sun rising to the setting thereof are able to endure all the day long,looking full against the Sunne, without winking or once mouing their eies:& from morning to night can abide to stand sometimes vpon one leg,and sometimes on the other in the sand, as scalding hot as it is. Vpon a certaine mountaine named Milus, there be men whose feet grow the tother way backward, and of either foot they haue eight toes, as *Megasthenes* doth report. And in many other hils of that countrey, there is a kind of men with heads like dogs, clad all ouer with skins of wild beasts, who in lieu of speech vse to bark:armed they are and well appointed with sharp and trenchant nailes:they liue vpon the prey which they get by chasing wild beasts,& fowling. *Ctesias* writes that

that there were discouered and knowne of them aboue 120000 in number. By whose report also, in a certaine country of India the women beare but once in their life, and their infants presently waxe grey so soone as they are borne into the world. Also, that there is a kind of people named Monoscelli, that haue but one leg apeece, but they are most nimble, and hop wondrous swiftly. The same men are also called Sciopodes, for that in hotest season of the Summer, they ly along on their back, and defend themselues with their feet against the Suns heate: and these people as he saith are not farre from the Troglodites. Againe, beyond these Westward, some there be without heads standing vpon their necks, who cary eies in their shoulders. Among the Westerne mountains of India the Satyres haunt, (the country wherein they be, is called the region of the Cartaduli) creatures of all other most swift in footmanship: which one whiles run with all foure; otherwhiles vpon two feet only like men: but so light footed they are, that vnlesse they be very old and sick, they can neuer be taken. *Tauron* writeth, That the Choromandæ are a sauage and wild people: distinct voice and speech they haue none, but in stead thereof, they keep an horrible gnashing and hideous noise: rough they are and hairy all ouer their bodies, eies they haue red like the houlets, and toothed they be like dogs. *Eudoxus* saith, That in the Southern parts of India, the men kind haue feet a cubit long, but the wome so short & smal, that thereupon they be called Struthopodes, *i.* sparrow footed. *Megasthenes* is my Author, that among the Indian Nomades there is a kind of people, that in stead of noses haue only two smal holes, and after the manner of snakes they haue their legs & feet limmer, wherwith they crawle and creep, and named they are Syrictæ. In the vtmost marches of India, Eastward, about the source & head of the riuer Ganges, there is a nation called the Astomes, for that they haue no mouths: all hairy ouer the whole body, yet clothed with soft cotton and down that come from the leaues of trees: they liue only by the aire, and smelling to sweet odors, which they draw in at their nosthrils: No meat nor drinke they take, only pleasant sauours from diuers and sundry roots, flowres, and wild fruits growing in the woods they entertaine: and those they vse to carry about with them when they take any farre journey, because they would not misse their smelling. And yet if the sent be any thing strong and stinking, they are soone therwith ouercome, & dy withal. Higher in the country, and aboue these, euen in the edge and skirts of the mountains, the Pygmæi Spythamæi are reported to be: called they are so, for that they are but a cubit * or three * shaftments (or spannes) high, that is to say, three times nine inches. The clime wherein they dwel is very wholsome, the aire healthy, and euer like to the temperature of the Spring: by reason that the mountains are on the North side of them, & beare off all cold blasts. And these prety people *Homer* also hath reported to be much troubled & anoied by cranes. The speech goeth, that in the Spring time they set out all of them in battell aray, mounted vpon the backe of rammes and goats, armed with bowes and arrowes, and so downe to the sea side they march, where they make soule worke among the egges & yong cranelings newly hatched, which they destroy without all pitty. Thus for three months this their journy and expedition continueth, and then they make an end of their valiant seruice: for otherwise if they should continue any longer, they were neuer able to withstand the new flights of this soule, grown to some strength and bignesse. As for their houses and cottages, made they are of clay or mud, souls feathers, and birds egge shels. Howbeit, *Aristotle* writes, That these Pygmæans liue in hollow caues & holes vnder the ground. For all other matters he reports the same that all the rest. *Isogonus* saith, that certain Indians named Cyrni, liue a hundred and fortie yeares. The like he thinketh of the Æthyopian Macrobij, and the Seres: as also of them that dwell on the mount Athos: and of these last rehearsed, the reason verily is rendred to be thus, because they feed of vipers flesh, & therefore is it that neither lice breed in their heads, nor other vermine in their cloths, for to hurt & annoy their bodies. *Onesicritus* affirmeth, That in those parts of India where there are no shadowes to be seene, the men are fiue cubits of stature, and two hand breadths ouer: that they liue 130 yeares, and neuer age for all that and seem old, but die then, as if they were in their middle and settled age. *Crates* of Pergamus nameth those Indians who liue aboue an hundred yeare, Gymnetes: but others there be, and those not a few, that call them Macrobij. *Ctesias* saith there is a race or kinred of the Indians named Pandore, inhabiting certaine vallies, who liue two hundred years: in their youthfull time the haire of their head is white, but as they grow to age, waxeth black. Contrariwise, others there be neer neighbours to the Macrobij, who exceed not fortie years, and their women beare but once in their life time. And this also is auouched by *Agatharcides*,

Agatharcides, who affirmeth moreouer, that all their feeding is vpon locusts, and that they are very quicke and swift of foot. *Clitarchus* and *Megasthenes* both name them Mandri, and thinke they haue 300 villages in their countrey. Moreouer, that the women bring forth children at seuen yeares of age, and wax old at forty. *Artemidorus* affirmes, that in the Island Taprobana the people liue exceeding long without any malady or infirmitie of the body. *Duris* maketh report, That certaine Indians ingender with beasts, of which generation are bred certaine monstrous mungrels halfe beasts and halfe men. Also, that the Calingian women of India conceiue with child at fiue yeares of age, and liue not aboue eight. In another tract of that countrey there be certaine men with long shagged tailes, most swift and light of foot: and some againe that with their eares couer their whole body. The Orites are neighbours to the Indians, diuided onely from them by the riuer Arbis, who are acquainted with no other meate but fish, which they split and slice into pieces with their nailes, and rost them against the Sun, and then make bread thereof, as *Clitarchus* reporteth. *Crates* of Pergamus saith likewise, that the Troglodites aboue Ethyopia be swifter than horses: and that some Æthiopians are aboue eight cubites high: and these are a kinde of Ethiopian Nomades, called Syrbotæ, as he saith, dwelling along the riuer Astapus toward the North pole. As for the nation called Menismini, they dwel from the Ocean sea twenty dayes iourney, who liue of the milke of certain beasts that we cal Cynocephales, hauing heads and snouts like dogs. And whole heards and flocks of the females they keepe and feed, killing the male of them all, saue onely to serue for maintenance of the breed. In the desarts of Africke ye shall meet oftentimes with Fairies, appearing in the shape of men and women, but they vanish soone away like fantasticall delusions. See how Nature is disposed for the nones to deuise full wittily in this and such like pastimes to play with mankinde, thereby not only to make her self merry, but to set vs a wondring at such strange miracles. And I assure you, thus dayly and hourely in a manner playeth she her part, that to recount euery one of her sports by themselues, no man is able with all his wit and memory. Let it suffice therfore to testifie and declare her power, that we haue set downe those prodigious and strange workes of hers shewed in whole nations: and then go forward to discourse of some particulars approued and knowne in man.

Chap. III.

¶ *Of prodigious and monstrous births.*

That women may bring forth three at one birth appeares euidently by the example of the three twins *Horatij* and *Curiatij*. But to go aboue that number is reputed and commonly spoken to be monstrous, and to portend some mishap: but only in Egypt, where women are more than ordinary fruitfull, by drinking of Nilus water, which is supposed to help generation. Of late yeres, and no longer since than in the later end of the reigne of *Aug. Cæsar*, at Ostia there was a woman (a Commoners wife) deliuered at one birth of two boies & as many girles, but this was a most prodigious token, and portended no doubt the famine that ensued soone after. In Peloponnesus there is found one woman that brought forth at foure births 20 Children, and the greater part of them all did well and liued. *Trogus* saith, that in Egypt it is an ordinarie thing for a woman to haue seuen at a birth. It falleth out moreouer, that there come into the world children of both sexes, whom wee call Hermophrodites. In old time they were knowne by the name of Androgyni, and reputed then for prodigious wonders, how soeuer now men take delight and pleasure in them. *Pompey* the great, in his Theatre which hee adorned and beautified with singular ornaments and rare deuices of antique worke, as wel for the admirable subiect and argument thereof, as the most curious and exquisit hand of cunning and skilfull artificers, among other images and pourtracts there set vp, represented one *Eutiche* a Woman of Tralleis, who after she had in her life time borne thirty births, her corps was caried out by twenty of her children to the funerall fire to be burnt, according to the maner of that countrey. As for *Alcippe* she was deliuered of an Elephant, marie that was a monstrous and prodigious token, and foreshewed some heauy fortune that followed after. Also in the beginning of the Marsians war there was a bondwoman brought forth a Serpent. In sum, there be many misshapen monsters come that way into the world, of diuers and sundry formes. *Claudius Cæsar* writeth, That in Thessalie there was borne a monster called an Hippocentaure, that is, halfe a man

a man and halfe a horſe, but it died the very ſame day. And verily after he came to weare the diadem, we our ſelues ſaw the like monſter ſent vnto him out of Egypt, embalmed and preſerued in honey. Among many ſtrange examples appearing vpon record in Chronicles, we reade of a childe in Sagunt, the ſame yeare that it was forced and raſed by *Anabal*, which ſo ſoone as it was come forth of the mothers wombe preſently returned into it againe.

Chap. IIII.

¶ *Of the change of one Sex to another, and of Twins borne.*

IT is no lie nor fable, that females may turne to be males: for we haue found it recorded, that in the yearely Chronicles called Annals, in the yere when *Publius Licinius Craſſus*, and *C. Caſſius Longinus* were Conſuls, there was in Caſſinum a maid childe, vnder the very hand and tuition of her parents, without ſuſpition of being a changeling became a boy: and by an Ordinance of the Soothſayers called Aruſpices, was confined to a certain deſart Iſland, and thither conueyed. *Licinius Mutianus* reporteth, that he himſelfe ſaw at Argos one named *Areſcon*, who before time had to name *Areſcuſa*, and a married wife: but afterwards in proceſſe of time came to haue a beard, and the generall parts teſtifying a man, and thereupon wedded a wife. Likewiſe (as he ſaith) he ſaw at Smyrna a boy changed into a girle. I my ſelfe am an eye witneſſe, That in Africke one *L. Coſticius* a citiſen of Tiſdrita, turned from a woman to be a man vpon the very mariage day, who liued at the time I wrot this booke. Moreouer, it is obſerued, that if women bring twins, it is great good hap if they all liue, but either the mother dieth in childbed, or one of the babes, if not both. But if it fortune that the twinnes be of both ſexes, the one male, the other female, it is ten to one if they both eſcape. Moreouer this is well knowne, that as women age ſooner than men, and ſeeme old, ſo they grow to their maturitie more timely than men, and are apt from procreation before them. Laſt of all, when a woman goeth with childe, if it bee a man childe, it ſtirreth oftner in the wombe, and lieth commonly more to the right ſide: whereas the female moueth more ſeldom, and beareth to the left.

Chap. V.

¶ *The Generation of Man, the time of childe-birth from ſeuen moneths to eleuen, teſtified by many notable examples out of hiſtorie.*

ALl other creatures haue a ſet time limited by Nature, both of going with their yong, and alſo of bringing it forth, each one according to their kinde: Man only is borne all times of the yeare, and there is no certaine time of his abode in the wombe after conception; for one commeth into the world at the ſeuen moneths end, another at the eighth, and ſo to the beginning of the ninth and tenth. But before the ſeuenth moneth there is no infant euer borne that liueth. And none are borne at ſeuen moneths end, vnleſſe they were conceiued either in the very change of the moone, or within a day of it vnder or ouer. An ordinary thing it is in Egypt for women to go with yong eight moneths, and then to be deliuered. And euen in Italy alſo now adaies children ſo borne liue and do well: but this is againſt the common receiued opinion of all old writers. But there is no certainty to ground vpon in all theſe caſes, for they alter diuers waies. Dame *Veſtilia* (the widow of *C. Herdtius*, wife afterward to *Pomponius*, and laſt of all maried to *Orfitus*, all right worſhipful citiſens, and of moſt noble houſes) had 4 children by her three husbands, to wit *Sempronius*, whom ſhe bare at the ſeuenth moneth, *Suillius Ruſus* at the eleuenth: and ſeuen moneths alſo ſhe went with *Corbulo*, yet they liued all, and theſe two laſt came both to be Conſuls: After all theſe ſons, ſhe bare a daughter, namely *Caſonia* (wife to the Emperor *Caius Caligula*) at the eighth moneths end. They that are borne thus in this moneth haue much ado to liue, and are in great danger for forty dayes ſpace: yea, and their mothers are very ſickly, and ſubiect to fall into vntimely trauell all the fourth moneth and the eighth, and if they fall in labor and come before their time they die. *Maſſurius* writeth, that *L. Papyrius* the Pretor or Lord chief Iuſtice, when a ſecond heire in remainder made claim, and put in plea for his inheritance of the goods, made an award, and gaue iudgement againſt him, in the behalfe of an Infant the right heire, borne after the deceaſe of his father; vpon this, That the mother came in and teſtified, how ſhe was deliuered of that childe within thirteene moneths

moneths after the death of the Teſtator: the reaſon was, becauſe there is no definite time certaine for women to go with childe.

Chap. VI.

¶ *Of Conceptions: and ſignes diſtinguiſhing the ſex in great bellied women before they are deliuered.*

IF ten dayes after a woman hath had the company of a man ſhee feele an extraordinary ache in the head, and perceiue giddineſſe in the brain as if all things went round; finde a dazling and miſtineſſe in the eies, abhorring and loathing meat, and withall a turning and wambling in the ſtomacke; it is a ſigne that ſhe is conceiued, and beginneth to breed: if ſhe goe with a boy better coloured will ſhe be all the time, and deliuered with more eaſe, and by the 40 day ſhe ſhall feele a kinde of motion and ſtirring in her wombe. But contrarie it falleth out in the breeding of a girle, ſhe goeth more heauily with it, and findeth the burthen heauier, her legs and thighes about the ſhare will ſwell a little. And ninetie dayes it will be before ſhe abſolutely perceiueth any mouing of the infant. But be it male or female ſhee breeds, they put her to much paine and grieuance when their haire beginneth to bud forth, and euer at the full of the Moone: and euen the very infants after they are borne are moſt amiſſe and fartheſt out of frame about that time. And verily great care muſt be had of a woman with child all the time ſhe goeth therewith, both in her gate, and in euery thing elſe that can be named: for if women feed vpon ouer-ſalt and poudered meat they wil bring forth a child without nailes: and if they hold not their wind in their labor, longer it will be ere they be deliuered, and with more difficultie. Much yawning in the time of trauell is a deadly ſigne; like as to ſneeſe preſently vpon conception threatneth abortion or a ſlip.

Chap. VII.

¶ *Of the conception and generation of Man.*

I Am abaſhed much, and very ſory to thinke and conſider what a poore and ticklish beginning man hath, the proudeſt creature of all others, when the ſmel only of the ſnuffe of a candle put out is the cauſe oft times that a woman fals into vntimely trauel. And yet ſee, theſe great tyrans, and ſuch as delight only in carnage and bloud ſhed haue no better original. Thou then that preſumeſt vpon thy bodily ſtrength, thou that ſtandeſt ſo much vpon Fortunes fauors, and haſt thy hands full of her bountifull gifts, taking thy ſelf not to be a foſter-child and nurceling of hers, but a naturall ſon borne of her owne body: thou I ſay that buſieſt thy head euermore, and ſetteſt thy minde vpon conqueſts and victories: thou that art vpon euerie good ſucceſſe and pleaſant gale of proſperity puffed vp with pride, and takeſt thy ſelfe for a god, neuer thinkeſt that thy life when it was hung vpon ſo ſingle a thred, with ſo ſmall a matter might haue miſcarried. Nay more than that, euen at this day art thou in more danger than ſo, if thou chance to be but ſtung or bitten with the little tooth of a Serpent; or if but the verie kernell of a raiſin go downe thy throat wrong, as it did with the poet *Anacreon*, which coſt him his life. Or, as *Fabius* a Senator of Rome, and Lord chiefe Iuſtice beſides, who in a draught of milk fortuned to ſwallow a ſmall haire, which ſtrangled him. Well then, thinke better of this point, for he verily that will euermore ſet before his eies and remember the frailty of mans eſtate, ſhall liue in this world vprightly and in euen ballance, without inclining more to one ſide than vnto another.

Chap. VIII.

¶ *Of thoſe that be called Agrippæ.*

TO be borne with the feet forward is vnnaturall and vnkinde: and ſuch as come in that order into the world the Latines were wont to name Agrippæ, as if a man ſhould ſay, born hardly and with much ado. And in this maner *M. Agrippa* (as they ſay) came forth of his mothers wombe, the only man almoſt, known to haue brought any good fortune with him, and proſpered in the world of all that euer were in that ſort borne. And yet as happy as hee was,

and how well soeuer he chieued in some respects,he was much pained with the gout,and passed all his youth and many a day after in bloudy wars,and in danger of a thousand deaths. And hauing escaped all these harmfull perils,vnfortunate he was in all his children, and especially in his two daughters the *Agrippinæ* both,who brought forth those wicked Imps so pernicious to the whole earth,namely *C. Caligula* and *Domitius Nero*,two Emperours, but two fiery flames to consume and waste all mankinde. Moreouer, his infelicitie herein appeared, that hee liued so short a time,dying as he did a strong and lusty man, in the 51 yeare of his age, tormented and vexed with the adulteries of his owne wife,oppressed with the heauy and intolerable seruitude that he was in vnder his wiues father. In which regards it seems he paid full deare for the presage of his vntoward birth and natiuitie. Moreouer,*Agrippina* hath left in writing, That her son *Nero* also,late Emperor, who all the time of his reigne was a very enemy to all mankinde, was borne with his feet forward. And in truth by the right order and course of Nature, a man is brought into the world with his head first,but is carried forth with his feet formost.

Chap. IX.

¶ *Births cut out of the wombe.*

BVt more fortunate are they a great deale whose birth costeth their mothers life, parting from them by means of incision: like as *Scipio Africanus* the former, who came into the world in that manner: and the first that euer was firnamed *Cæsar*,was so called for the like cause. And hereof comes the fore-name also of the *Cæsones*. In like sort also was that *Manlius* borne who entred Carthage with an army.

Chap. X.

¶ *Who are Vopisci.*

THe Latines were wont to call him Vopiscus [or rather Opiscus] who being one of two twins,hapned to stay behinde in the wombe the full terme, when as the other miscarried by abortiue and vntimely birth. And in this case there chance right strange accidents,although they fall out very seldome.

Chap. XI.

¶ *Examples of many Infants at one birth.*

FEw creatures there be besides women,that seeke after the male,and can skill of their companie after they be once conceiued with yong: one kind verily or two at the most there is knowne to conceiue double one vpon the other. We find in books written by Physitians, and in their records who haue studied such matters,and gathered obseruations,that there haue passed or bin cast away from a woman at one only slip, 12 distinct children:but when it falleth out that there is some pretty time betwixt two conceptions,both of them may tarry their full time,and be borne with life,as appeared in *Hercules* and his brother *Iphiclus*; as also in that harlot who was deliuered of two infants,one like her owne husband, the other resembling the Adulterer: likewise in a Proconnesian bond-seruant,who was in one day gotten with childe by her master, and also by his Baily or Procurator; and being afterwards deliuered of two children,they bewrayed plainly who were their fathers. Moreouer, there was another who went her full time, euen nine moneths for one childe,but was deliuered of another at the fiue moneths end. Furthermore in another, who hauing dropped downe one childe at the end of seuen moneths,by the end of the ninth came with two twinnes more. Ouer and besides it is commonly seen,that children be not alwaies answerable to the parents in euery respect: for of perfect fathers and mothers who haue all their limmes,there are begotten children vnperfect and wanting some members: and contrariwise, parents there are maimed and defectiue in some part,who neuertheless beget children that are sound and entire, and with all that they should haue. It is seen also,that infants are at a default of those parts their parents misse: yea and they carry often times certaine markes, moles, blemishes,and skarres of their fathers and mothers, as

as like as may be. Among the people called Dakes the children vsually beare the markes imprinted in their armes,of them from whom they descend,euen to the fourth generation.

Chap. XII.

¶ *Examples of many that haue been very like and resembled one another.*

IN the race and family of the *Lepidi* it is said there were three of them (not successiuely one after another,but out of order after some intermission) who had euery one of them at their birth a little pannicle or thin skin growing ouer their eye. Some haue bin known to resemble their grandsires,and of two twins one hath beene like the father, the other the mother; but he that was borne a yere after hath bin so like his elder brother,as if he had bin one of the twins. Some women there be that bring all their children like to themselues; and others againe as like to their husbands: and some like neither the one nor the other. You shall haue Women bring all their daughters like to their fathers,and contrariwise their sonnes like to themselues. The same is notable,and yet vndoubted true,of one *Nicæus* a famous Wrestler of Constantinople, hauing to his mother a woman begotten in adulterie by an Æthiopian,and yet with white skin nothing different from other women of that countrey,was himself se black, and resembled his grandsire the Æthiopian and abouesayd. Certes,the cogitations and discourses of the minde make much for these similitudes and resemblances whereof we speake, and so likewise many other accidents and occurrent obiects are thought to be very strong and effectuall therin,whether they come in sight,hearing, and calling to remembrance,or imaginations only conceiued and deeply apprehended in the very act of generation, or the instant of conception. The wandring cogitation also and quicke spirit either of father or mother,flying to and fro all on a sudden from one thing to another at the same time,is supposed to be one cause of this impression, that maketh either the foresaid vniforme likenesse,or confusion and varietie. And hereupon it commeth, and no maruell it is, that men are more vnlike one another, than other Creatures: for the nimble motions of the spirit,the quicke thoughts, the agilitie of the minde,the varietie of discourse in our wits,imprinteth diuers formes, and many marks of sundry cogitations: whereas the imaginatiue facultie of other liuing creatures is immoueable, & alwaies continueth in one: in all it is alike,and the same still in euery one,which causeth them alwaies to engender like to themselues,each one in their seuerall kindes. *Artenon* a mean man amongst the Commons,was so like in all points to *Antiochus* King of Syria,that *Laodicea* the Queen, after that *Antiochus* her husband was killed,serued her owne turne by the said *Artenon*,and made him play the part of *Antiochus*, vntill she had by his meanes, as in the Kings person, recommended whom she would,and made ouer the kingdome and crown in succession and reuersion to whom she thought good. *Vibius* a poore commoner of Rome,and *Publicius* one newly of a bond slaue made a free-man, were both of them so like vnto *Pompey* the Great, that hardly the one could be discerned from the other,so liuely did they represent that good visage of his so full of honestie, so fully expressed they and resembled the singular maiestie of that countenance which appeared in *Pompeius* his forehead. The like cause it was that gaue his father also the syrname of *Menogenes*,his Cooke, albeit he was syrnamed already *Strabo*, for his squint eyes: but hee would needs beare the name of a defect and infirmitie euen in his bond-seruant,for the loue he had vnto him by reason of his likenesse. So was one of the *Scipio's* also syrnamed *Serapius* vpon the like occasion, after the name of one *Serapia*, who was but a base slaue of his, and no better than his swine heard,or dealer in buying and selling of swine. Another *Scipio* after him of the same house came to be syrnamed *Salutio*, because a certaine jester of that name was like vnto him. After the same manner one *Spinter*,a player of the second place or part, and *Pamphilus* another player of the third part,or in the third place, gaue their names to *Lentulus* and *Metellus*, who both were Consuls together in one yeare,for that they resembled them so truly. And certes mee thinkes this fell out very vntowardly, and was but a ridiculous pageant, and a very vnseemly shew vpon a stage,to see both Consuls liuely represented there at once in the persons of these two players. Contrariwise, *Rubrius* the stage player was firnamed *Plancus*, because he was so like to *Plancus* the Orator. Againe,*Burbulcius* and *Menogenes*, both players of Enterludes,resembled *Curio* the father or the elder,and *Messala Censorius*,for all he had been Censor

that the one could not shift and auoid the syrname of *Burbuleius*, and the other of *Monogenes*. There was in Sicily a certaine fisherman who resembled in all parts *Suria* the Pro-consull, not only in visage and feature of the face, but also in mowing with his mouth when hee spake, in drawing his tongue short, and in his huddle and thicke speech. *Cassius Severus* that famous orator was reproched for being so like vnto *Murmillo* a drouer or keeper of kine and oxen. *Toranius* a merchant slaue-seller, sold vnto *M. Antonius* (now one of the two great Triumvirs) two most beautiful and sweet faced boyes, for twins, so like ewere they one to the other, albeit the one was borne in Asia, and the other beyond the Alps. But when *Antony* afterwards came to know the same, and that this fraud and couzenage was bewraied and detected by the language & speech of the boyes, he fell into a furious fit of choler, and all to berated the foresaid *Toranius*. And when among other challenges he charged him with the high price he made him pay (for they cost him two hundred Sesterces, as for twins, when they were none such) the wily merchant being his craftsmaster answered, That it was the cause why he held them so deare, and sold them at so deare a rate: for (quoth he) it is no maruell at all that two brethren twins that lay both together in one belly do resemble one the other; but that there should be any found borne as these were in diuers countries, so like in all respects as they, he held it for a most rare and wonderfull thing. This answer of his was deliuered in so good time, and so fitly to the purpose, that *Antonie* the great man, who neuer was well but when he outlawed citizens of Rome, and did confiscat their goods, he I say that erewhile was all enraged and set vpon reuiling and reprochfull termes, was not only appeased, but also contented so with his bargaine, that he prised those two boies as much as any thing else in all his wealth.

Chap. XIII.

¶ *The cause and manner of generation.*

SOme bodies there be by a secret of nature so disagreeing, that they are vnfit for generation one with another. And yet as barren as they be so coupled together, fruitfull they are enough being ioyned with others. Such were *Augustus* the Emperor and his wife *Liuia*. In like manner some men there be as well as women, that can skill of getting and breeding none but daughters: and others there be againe that are good at none but sonnes: and many times it falleth out that folke haue sonnes and daughters both, but they by turnes, this yeare a son, the next yeare a daughter, in order. So [*Cornelia*] the mother of the *Gracchi*, who for twelue childbeds kept this course duly: and *Agrippina*, the wife of *Cæsar Germanicus*, for nine, euer changing from the male to the female. Some women are barren all their youth; and others again beare but once in their whole life. Some neuer go their full time with their children; and such women, if peraduenture by helpe of physicke or other good means, and choice keeping, they ouercome this infirmitie, bring daughters ordinarily and no other. The Emperor *Augustus* among other singularities that he had by himselfe during his life, saw ere he died the nephew of his neece, that is to say his progenie to the fourth degree of lineall discent: and that was *M. Scyllanus*, who hapned to be borne the same yeare that he departed out of this world. He hauing been Consull, and afterward Lord Gouernor of Asia, was poysoned by prince *Nero*, to the end that he might thereby attaine to the empire. *Qu. Metellus Macedonicus* left behind him six children, and by them eleuen nephewes: but daughters in law and sons in law, and of all such as called him father, seuen. In the Chronicles of *Augustus Cæsars* acts for his time, we finde vpon record, that in his twelfth Consulship, when *L. Sylla* was his companion and collegue in gouernment, vpon the eleuenth day of Aprill, *C. Crispinus Helarus* a gentleman of Fesulæ, came with solemne pompe into the Capitoll, attended vpon with his nine children, seuen sons and two daughters; with 27 Nephewes the sonnes of his children, and 29 nephewes more, once remoued, who were his sons nephewes, and twelue Neeces besides that were his childrens daughters, and with all these solemnly sacrificed.

CHAP.

Chap. XIIII.

¶ *Of the same matter more at large.*

A Woman commonly is past childe-bearing after 50 yeares of her age. And for the most part their monthly termes stay at forty. As for men, it is cleare and wel knowne, that king *Massinissa* when he was aboue 86 yeres old, begat a son whom he called *Methymathmas*: & *Cato Censorius* that famous Censor begat another vpon the daughter of *Salonius* his vassal, when hee was past 80 yeares of age. And hereof it commeth, that the race which came of his other children were surnamed *Liciniani*, but the off-spring of this last sonne, *Salonini*, from whom *Cato Vticensis* (who slew himselfe at Vtica) is lineally descended. Moreouer, it is not long since, that dame *Cornelia* of the house and linage of the *Scipio's*, bare vnto *Lu. Saturninus* her husband (who died whiles he was Prouost of the city of Rome) a son named *Volusius Saturninus*, and who afterwards liued to be Consull, who was begotten when his father was 62 yeares old with the better. To conclude, there haue beene amongst meaner persons very many knowne to haue gotten children after fourscore and fiue.

Chap. XV.

¶ *Of Womens monethly sickneſſe.*

OF all liuing creatures a woman hath a flux of bloud euery moneth: and hereupon it is, that in her wombe onely there are found a false conception called *Mola*, *i.* a Moone-calfe, that is to say, a lump of flesh without shape, without life, and so hard withal, that vneth a knife will enter and pierce it either with edge or point. Howbeit, a kinde of mouing it hath, and staieth the course of her moneths: and sometime after the manner of a childe indeed, it cosseth the woman her life: otherwhiles it waxeth in her belly as she groweth, and ageth with her; now and then also it slippeth and falleth from her with a laske and looseneſſe of the guts. Such a thing breeds likewise in the bellies of men, vpon the hardneſſe of liuer or spleen, which the Physitions call *Scirrhus*, *i.* an hard wedge and cake vnder their short-ribs. And such an one had *Oppius Cato* a nobleman of Rome, late Pretour. But to come againe to women, hardly can there be found a thing more monstrous than is that flux & course of theirs. For if during the time of their sicknes they happen to approch or go ouer a vessel of wine, be it neuer so new, it wil presently soure if they touch any standing corne in the field, it wil wither and come to no good. Also, let them in this estate handle graffes, they will die vpon it: the herbes and young buds in a garden if they do but passe by, will catch a blast, and burne away to nothing. Sit they vpon or vnder trees whiles they are in this case, the fruit which hangeth vpon them will fall. Do they but see themselues in a looking glasse, the cleare brightneſſe thereof turneth into dimneſſe, vpon their very sight. Look they vpon a sword, knife, or any edged toole, bee it neuer so bright, it waxeth dusk-ish, so doth also the liuely hue of yvorie. The very bees in the hiue die. Yron & steele presently take rust, yea, and brasse likewise, with a filthy, strong, and poisoned stink, if they lay but hand thereupon. If dogs chance to taste of womens fleures, they run mad therewith; and if they bite any thing afterwards, they leaue behinde them such a venome, that the wounds are incureable: may the very clammy slime Bitumen, which at certaine times of the yere floteth and swimmeth vpon the lake of Sodom, called Asphaltites in Iury, which otherwise of the owne nature is pliable enough, soft and gentle, and ready to follow what way a man would haue it, cannot be parted and diuided asunder (for by reason of the viscositie, it cleaueth and sticketh like glue, and hangeth all together, pluck as much as a man will at it) but only by a thred that is stained with this venomous bloud: euen the silly Pismires (the least creatures of all others) hath a perceiuance & sence of this poison, as they say; for they cast aside & will no more come to that corn, which they haue found by tast to be infected with this poison. This malady, so venomous and hurtful as it is, followeth a woman stil euery 30 daies; and at 3 moneths end, if it stay so long, it commeth in great abundance. And as there be some women that haue it ofter than once a month, so there are others again that neuer see ought of it. But such lightly are barren, and neuer bring children. For in very deed, it is the materiall substance of generation: and the mans seed serueth in stead of a runnet to gather it round into a curd: which afterwards in processe of time

time quickneth and grows to the form of a body;which is the cause that if women with childe G
haue this flux of the moneths,their children are not long liued,or else they proue feeble,sickly
and full of filthie humours,as *Nigidius* writeth.

Chap. xvi.

¶ *In like manner,of births : and infants in the mothers wombe.*

THe same *Nigidius* is of opinion,that a womans milke, nource to her owne child & giuing
it sucke,will not corrupt and be naught for the babe, if she conceiue againe by the same
man to whom she brought the former childe. Also it is held,that in the beginning & end
of the foresaid menstruall fleures, a woman is very apt to conceiue. Moreouer, it is commonly
receiued for an infallible argument in women,that they are fruitfull and with childe, if when H
they annoint their eies with their owne spittle as with a medicine, the same appeare infected
and to change the colour thereupon. Furthermore, doubtlesse it is, that children breed their
fore teeth in the seuenth moneth after they are borne,and first those in the vpper chaw, for the
most part:likewise that they shed the same teeth about the seuenth yere of their age, & others
come vp new in the place. Certaine it is also,that some children are borne into the world with
teeth,as *M. Curius*,who thereupon was surnamed *Dentatus*,and *Cn. Papyrius Carbo*, both of them
very great men and right honourable personages. In women the same was counted but an vn-
lucky thing,& presaged some misfortune,especially in the daies of the KK. regiment in Rome:
for when *Valeria* was borne toothed,the wizards and Soothsayers being consulted thereabout,
answered out of their learning by way of Prophesie, That look into what citie she was caried to I
nource, she should be the cause of the ruine and subuersion thereof; whereupon had away shee
was and conueied to Suessa Pometia,a city at that time most flourishing in wealth and riches:
and it proued most true in the end,for that city was vtterly destroied. *Cornelia* the mother of the
Gracchi is sufficient to proue by her own example, that women are neuer borne for good whose
genitall parts for procreation are growne together,and yeeld no entrance. Some children are
borne with an entire whole bone that taketh vp all the gum,instead of a row of distinct teeth;as
a son of *Prusias* king of the Bythinians,who had such a bone in his vpper chaw. This is to be ob-
serued about teeth,that they onely check the fire and burn not to ashes with other parts of the
body:and yet as inuincible as they are and able to resist the violence of the flame, they rot and
become hollow with a little catarrhe or watereish rheume that droppeth and distilleth vpon K
them:white they may be made, with certaine mixtures and medicines called *Dentifices*. Some
weare their teeth to the very stumps onely with vse of chawing ; others againe loose them first
out of their head;they serue not onely to grind our meat for our daily food and nourishment,
but necessary also they be for the framing of our speech. The fore-teeth stand in good stead to
rule and moderate the voice by a certaine consent and tuneable accord,answering as it were to
the stroke of the tongue:and according to that row and ranke of theirs wherein they are set, as
they are broader or narrower, greater or smaller, they yeeld a distinction and varietie in our
words,cutting and hewing them thicke and short, framing them pleasant, plaine, and ready,
drawing them out at length,or smuddering and drowning them in the end : but when they bee
once falne out of the head,man is bereaued of all means of good vtterance and explanation of L
his words. Moreouer,there are some presages of good or bad fortune, gathered by the teeth:
men ordinarily haue giuen them by nature 32 in all, except the nation of the Turduli. They
that haue aboue this number,may make account(as it is thought)to liue the longer. As for wo-
men,they haue not so many : they that haue on the right side in the vpper iaw two eie-teeth,
which the Latines call Dogs-teeth,may promise themselues the flattering fauors of Fortune,
as it is well seene in *Agrippina* the mother of *Domitius Nero* : but contrariwise, the same teeth
double in the left side aboue,is a signe of euill lucke. It is not the custome in any countrey to
burne in a funerall fire the dead corps of any infant before his teeth be come vp;but hereof will
we write more at large in the Anatomie of man, when wee shall discourse purposely of euerie
member and part of the body. *Zoroastres* was the onely man that euer wee could heare of, who
laughed the same day that he was borne:his brain did so euidently pant and beat,that it would
beare vp their hands that laid them vpon his head:a most certain presage & fore-token of that
great learning that afterward, he attained vnto. This also is held for certain and resolued vpon
that a man at three yeares of age,is come to one moitie of his growth and height. As also this
is

A is obserued for an vndoubted truth,that generally all men come short of the ful stature in time
past,and decrease stil euery day more than other : and seldome shall you see the son taller than
his father; for the ardent heat of the elementarie fire (whereunto the world enclineth already
now toward the later end,as somtimes it stood much vpon the waterie element)deuoureth and
consumeth that plentifull humor and moisture of naturall seed,that engendreth all things:and
this appeareth more euidently by these examples following. In Crete, it chanced that an hill
clane asunder in an earth-quake,and in the chink thereof was found a body standing,46 cubits
high;some say it was the body of *Orion*;others,of *Otus*. We find in chronicles & records of good
credit,that the body of *Oreſtes* being taken vp,by direction from the Oracles, was seuen cubits
long. And verily that great and famous poet *Homer*,who liued almost 1000 yeres ago,complai- * Ten foot and an halfe.
B ned and gaue not ouer, That mens bodies were lesse of stature euen then,than in old time. The
Annales set not downe the stature and bignesse of *Nevius Pollio* ; but that he was a mighty gy-
ant,appeareth by this that is written of him, namely,that it was taken for a wonderfull strange
thing,that in a great rout & presse of people that came running together vpon him, he had like
to haue bin killed. The tallest man that hath bin seen in our age, was one named *Gabbara*,who in
the daies of prince *Claudius* late Emperor,was brought out of Arabia ; nine foot high was hee,
and as many inches. There were in the time of *Augustus Cæsar* 2 others,named * *Pusio* and *Secun-* Such an one as little *John*, for so the nick-name signifieth.
dilla,higher than *Gabbara* by halfe a foot,whose bodies were preserued and kept for a wonder in
a charnell house or sepulchre within the gardens of the Salustians. Whiles the same *Augustus*
sate as president,his niece *Iulia* had a little dwarfish fellow not aboue 2 foot and a hand bredth
C high,called *Conopas*,whom she set great store by and made much of : as also another she dwarfe
named *Andromeda*,who somtime had been the slaue of *Iulia* the princesse,and by her made free.
M. Varro reporteth,that *Manius Maximus*,and *M. Tullius*,were but two cubits high,& yet they
gentlemen and knights of Rome : and in truth we our selues haue seen their bodies how they
lie embalmed and chested,which testifieth no lesse. It is well knowne that there be some that
naturally are neuer but a foot and a halfe high;others again somwhat longer;and to this heigth
they came in three yeres,which is the full course of their age, and then they die. Wee reade
moreouer in the Chronicles,that in Salamis one *Euthimenes* had a son,who in three yeres grew
to be three cubits high,but he was in his gate slow and heauy, and in his wit as dull and bloc-
kish;howbeit in his time vndergrowne he was,and his voice changed to be great, and at three
D yeares end died suddenly of a generall crampe or contraction of all the parts of his body. It is
not long since I saw my selfe the like in all respects (sauing that vndergoing aforesaid) in a son
of one *Cornelius Tacitus*,a Roman knight,and a procurator or general receiuer and Treasurer for
the State in Gaule Belgique;such the Greeks call Ἐκτραπέλους *i. Ectrapelos* ; wee in Latine haue no
name for them.

Chap. xvi.

¶ *Certaine notable obseruations in bodies of men and women.*

WE see tried by experience, that take measure of a man from the sole of the foot vp to
the crowne of the head, so far it is between the ends of his two middle and longest
E fingers , when he stretcheth out his armes and hands to the full. As also, that some
men and women be stronger of the right side than of the left:others againe that be as strong of
one as the other;and there be,that are altogether left handed,and best with that hand;but that
is seldome or neuer seen in women. Moreouer,men weigh heauier than women ; and in euerie
kind of creature,dead bodies be more heauy than the quicke : and the same parties sleeping
weigh more than waking. Finally,obserued it is, that the dead corps of a man floteth on the
water with the face vpward;but contrariwise women swim groueling, as if Nature had proui-
ded to saue their honesty and couer their shame,euen when they are dead.

Chap. xviii.

F ¶ *Examples of diuers extraordinarie cases in mans body.*

WE haue heard, that some mens bones are sollid and massie, and so do liue without any
marrow in them: you may know them by these signes,they neuer feele thirst, nor put
forth any sweat;and yet we know that a man may conquer and master his thirst if hee
list;

liſt: for ſo a gentleman of Rome one *Iulius Viator*, deſcended from the race of the Vocontians our allies; being falne into a kind of dropſie between the skin and the fleſh during his minority and nonage, and forbidden by the Phyſicions to drink; ſo accuſtomed himſelfe to obſerue their direction, that naturally he could abide it: inſomuch, that all his old age euen to his dying day he forbare his drink. Others alſo haue bin able to command and ouer-rule their nature in many caſes, and breake themſelues of diuers things.

Chap. xix.

¶ *Strange natures and properties of diuers perſons.*

It is ſaid, that *Craſſus* (grandfather to that *Craſſus* who was ſlaine in Parthia) was neuer known to laugh all his life time, and thereupon was called *Agelaſtus*; and contrariwiſe, many haue bin found that neuer wept. Alſo that ſage and renowned wiſe man *Socrates*, was ſeene alwaies to carry one and the ſelf-ſame countenance, neuer more merry and cheerefull nor more ſolemne and vnquiet, at one time than at another. But this obſtinate conſtancy and firm cariage of the mind, turneth now and then in the end into a certain rigour and auſterity of nature, ſo hard and inflexible that it cannot be ruled, and in very truth deſpoileth men of all affections; and ſuch are called of the Greekes, Apathes, who had the experience of many ſuch: and (that which is a maruellous matter) thoſe eſpecially that were the great pillars of philoſophy and deep learned Clerks, namely *Diogenes* the Cinicke; *Pyrrho*, *Heraclitus* and *Timo*; and as for him he was ſo far gone in his humor, that he ſeemed profeſſedly to hate all mankind. But theſe were examples of a corrupt, peruerſe, & froward nature. As for other things, there be ſundry notable obſeruations in many; as in *Antonia* the wife of *Druſus*, who as it was well knowne, neuer ſpit: in *Pomponius* the poet, one that had ſometimes bin Conſull, who neuer belched. But as for ſuch as naturally haue their bones not hollow, but whole and ſolid, they be very rare and ſeldom ſeene, and called they are in Latine *Cornei ſi*. hard as horne.

Chap. xx.

¶ *Of bodily ſtrength and ſwiftneſſe.*

Varro in his treatiſe of prodigious and extraordinary ſtrength, maketh report of one *Tritanus*, a man that of body was but little and lean withall, howbeit of incomparable ſtrength, much renowned in the fence ſchoole, and namely, in handling the Samnites weapons, wearing their manner of armor, and performing their feats and maſteries of great name. He maketh mention alſo of a ſonne of his, a ſouldier, that ſerued vnder *Pompeius* the Great, who had all ouer his body, yea and throughout his armes and hands, ſome ſinewes running ſtreight out in length, others croſſing ouerthwart lattiſe-wiſe; and he ſaith moreouer of him, that when an enemie out of the camp gaue him defiance and challenged him to a combat, he would neither put on defenſiue harneſſe, ne yet arme his right hand with offenſiue weapon; but with naked hand made meanes to foile and ouercome him, and in the end when hee had caught hold of him, brought him away perforce into his own camp with one finger. *Iunius Valens* a captaine, penſioner or centurion of the gard-ſouldiers about *Auguſtus Ceſar*, was woont alone to beare vp a charriot laden with certain hogſheads or a butt of wine, vntill it was diſcharged thereof, & the wine drawne out: alſo his manner was with one hand to ſtay a coach againſt all the force of the horſes ſtriuing and ſtraining to the contrary; and to perform other wonderfull maſteries, which are to be ſeen engrauen vpon his tombe; and therefore (qd. *Varro*) being called *Hercules Ruſticellus*, he tooke vp his mule vpon his back and carried him away. *Fuſius Saluius* hauing two hundred pound weights at his feet, and as many in his hands, and twiſe as much vpon his ſhoulders, went withall vp a paire of ſtaires or a ladder. My ſelfe haue ſeene one named *Aſhanatus*, do wonderfull ſtrange matters in the open ſhew and face of the world, namely, to walke his ſtations vpon the ſtage with a cuirace of lead weighing 500 pound, booted beſides with a pair of buskins or greiues about his legges that came to as much in weight. As for *Milo* the great wreſtler of Crotone, when he ſtood firm vpon his feet, there was not a man could make him ſtir one foot; if he held a pomegranat faſt within his hand, no man was able to ſtretch a finger of his and force it out at length. It was counted a great matter, that *Philippides* ran 1140 ſtadia, to wit,

wit, from Athens to Lacedæmon in two daies, vntill *Laniſis* a courtier of Lacedæmon, and *Philonides* footman to *Alexander* the great, ran between Sicyone and Olis in one day, 1200 ſtadia. But now verily at this day we ſee ſome in the grand cirque, able to indure in one day the running of 160 miles. And but a while agoe we are not ignorant, that when *Fonteius* & *Vipſanus* were Conſuls, a yong boy but 9 yeres old, between noon and euening ran 75 miles. And verily a man may wonder the more at this matter, and come to the full conceit thereof, if he do but conſider, that it was counted an exceeding great iourny that *Tiberius Nero* made with three chariots (ſhifting from one to the other freſh) in a day and a night, riding poſt haſte vnto his brother *Druſus* then lying ſicke in Germany, and all that was but 200 miles.

Chap. xxi.

¶ *Examples of good Eie-ſight.*

We find in hiſtories as incredible examples as any be, as touching quickneſſe of Eie-ſight. *Cicero* hath recorded, that the whole Poeme of *Homer* called Ilias, was written in a piece of parchment, which was able to be couched within a nut ſhel. The ſame writer maketh mention of one that could ſee and diſcerne out-right 135 miles. And *M. Varro* nameth the man, and ſaith he was called *Strabo*; who affirmeth thus much moreouer of him, that during the Carthaginian war he was wont to ſtand and watch vpon Lilybæum, a cape in Sicily, to diſcouer the enemies fleet looſing out of the hauen of Carthage, and was able to tel the very juſt number of the ſhips. *Callicrates* vſed to make Piſmires and other ſuch like little creatures, out of yvorie ſo artificially, that other men could not diſcerne the parts of their body one from another. There was one *Myrmecides*, excellent in that kinde of workmanſhip: who of the ſame matter wrought a chariot with foure wheeles and as many ſteeds, in ſo little roome, that a ſilly flie might couer all with her wings. Alſo he made a ſhip with all the tackling to it, no bigger than a little bee might hide it with her wings.

Chap. xxii.

¶ *Of Hearing.*

As for hearing, there is one example wonderfull. For the bruit of that battell, whereupon Sybaris was forced & ſacked, was heard the very ſame day as far as Olympia in Greece. As touching the news of the Cimbrians defeature, as alſo the report and tidings of the victorie ouer the Perſians, made by the Roman Caſtores, the ſame day that it was atchieued, were held for diuine reuelations rather than humane reports, and the knowledge thereof came more by way of viſion than otherwiſe.

Chap. xxiii.

¶ *Examples of Patience.*

Many are the calamities of this life, incident to mankind, which haue affoorded infinite trials of mens patience, in ſuffering paines in their body. Among others, for women, the example of *Leæna* the courtiſan, is moſt rare and ſingular, who for all the dolorous tortures that could be deuiſed, would neuer bewray *Harmodius* and *Ariſtogiton*, who ſlew the tyranous king. And for men, *Anaxarchus* did the like, who being for ſuch a cauſe examined vpon the racke, in the midſt of his torments bit off his own tongue with his teeth, the only means whereby he might haply reueale and diſcloſe the matter in queſtion, and ſpit it in the face of the tyrant that put him to his torture.

Chap. xxiiii.

¶ *Examples of Memorie.*

As touching memorie, the greateſt gift of Nature, and moſt neceſſary of all others for this life, hard it is to iudge and ſay who of all others deſerued the chiefe honor therein: conſidering how many men haue excelled, and woon much glory in that behalfe. King *Cyrus*

was

was able to call euery souldier that he had through his whole army by his owne name. *L. Scipio* could do the like by all the citizens of Rome. Semblably, *Cineas*, Embassador of king *Pyrrhus*, the very next day that he came to Rome, both knew and also saluted by name all the Senate, & the whole degrees of Gentlemen and Cauallerie in the citie. *Mithridates* the king, reigned ouer two and twentie nations of diuers languages, and in so many tongues gaue lawes and ministred iustice vnto them, without truchman: and when he was to make speech vnto them in publicke assembly respectiuely to euery nation, he did performe it in their own tongue without interpretor. One *Charmidas* or *Charmadas*, a Grecian, was of so singular a memory, that he was able to deliuer by heart the contents word for word of all the books that a man would call for out of any librarie, as if he read the same presently within book. At length the practise hereof was reduced into an art of Memory: deuised and inuented first by *Simonides Melicus*, and afterwards brought to perfection and consummate by *Metrodorus Sepsius*; by which a man might learne to rehearse againe the same words of any discourse whatsoeuer after once hearing: and yet there is not a thing in man so fraile and brittle againe as it, whether it be occasioned by disease, by casual iniuries or occurrents, or by feare, through which it faileth somtime in part, and otherwhiles decaieth generally, and is clean lost. One with the stroke of a stone, fell presently to forget his letters onely, and could reade no more; otherwise his memorie serued him well enough. Another with a fall from the roofe of a very high house, lost the remembrance of his owne mother, his next kinsfolks, friends, and neighbors. Another in a sickneſſe of his, forgot his own seruants about him: and *Messala Corvinus* the great Orator, vpon the like occasion, forgot his own proper name. So fickle and slipperie is mans memorie: that oftentimes it assaieth and goeth about to leese it selfe, euen whiles a mans body is otherwise quiet and in health. But let sleep creepe at any time vpon vs, it seemeth to be vanquished, so as our poore spirit wandreth vp and downe to seeke where it is, and to recouer it againe.

Carneades, according to *Cicero* and *Quintilian*.

Chap. XXV.

¶ *The praise of C. Iulius Cæsar.*

For vigor and quicknesse of spirit, I take it, that *C. Cæsar* Dictator, went beyond all men besides. I speake not now of his vertue and constancie, neither of his high reach and deep wit, whereby he apprehended the knowledge of all things vnder the cope of heauen; but of that agilitie of minde, that prompt and ready conceit of his, as nimble and actiue as the verie fire. I haue heard it reported of him, that he was wont to write, to reade, to indite letters, and withall to giue audience to suiters & heare their causes all at one instant. And being employed, as you know he was, in so great and important affairs, he ordinarily indited letters to foure secretaries or clerkes at once: and when he was free from other greater businesse, he would otherwise finde seuen of them work at one time. The same man in his daies fought 50 set battels with banners displaied against his enemies: in which point, he alone out-went *M. Marcellus*, who was seene 40 times saue one in the field. Besides the carnage of citizens that hee made in the ciuill wars when he obtained victory, he put to the sword 1192000 of his enemies, in one battell or other. And certes for mine owne part, I hold this for no speciall glory and commendation of his, considering so great iniurie done to mankind by this effusion of bloud; which in some part he hath confessed himselfe, in that he hath forborne to set downe the ouerthrowes & bloud-shed of his aduersaries (fellow citizens) during the ciuill wars. Yet *Pompey* the great deserues honour more iustly for scouring the seas, and taking from the rouers 846 saile of ships. But to return again to *Cæsar*, ouer and aboue the qualities of worth before rehearsed, an especiall property of his owne he had, for elemency and mercy, wherein he so far forth surmounted all other men, that hee repented therof in the end. As for his magnanimity, it was incomparable, and he left such a president behind him, as I forbid all men to match or second it. For to speake of his sumptuosities, of his largesses, of the magnificent shewes exhibited to the people, the exceeding cost & charges therein bestowed, with all the stately furniture thereto belonging, were a point of him that fauored such lauish expence and superfluities, But herein appeared his true hautinesse of mind indeed, and that vnmatchable spirit of his, that when vpon the battel at Pharsalia, as wel the cofers & caskets with letters & other writings of *Pompey*, as also those of *Scipio's* before Thapsus, came into his hands, he was most true to them, and burnt all without reading one scrip or scrol.

CHAP.

Chap. XXVI.

¶ *The commendation of Pompey the great.*

As concerning all the titles and victorious triumphs of *Pompey* the great, wherein hee was equall in renowne and glory, not onely to the acts of *Alexander* the great, but also of *Hercules* in a manner, and god *Bacchus*: if I should make mention therof in this place, it would redound not to the honour onely of that one man, but also to the grandeur and Maiestie of the Roman empire. In the first place then, after he had recouered Sicily, and reduced it vnder obeisance (where his first rising was, and where hee began to shew himselfe in the quarrell of the Common weale, and to side with *Sylla*) hauing also conquered and subdued Africke, and raunged it vnder the obedience of Rome, where he acquired the surname of *Magnus*, by reason of the great booty and pillage which he brought from thence; being no higher of birth and calling, than a Roman gentleman or man of armes, entred with triumphant chariot into Rome: a thing that was neuer seene before in a man of that place and qualitie. Immediatly after this, he made a voiage into the West, and hauing brought vnder obeisance of the Romans 876 great townes, which he forced by assault betweene the Alpes and the marches of Spaine, he erected trophies and triumphant columnes vpon the mountain Pyrenæus, with the title and inscription of these victorious exploits; and neuer made one word of his victorie ouer *Sertorius*, so braue a mind he carried with him. And after the ciuill troubles and broiles appeased & quenched (which drew after them all forreine wars) he triumphed againe the second time, being as yet but a knight of Rome: so oftentimes a generall of command & conduct; before he euer serued as soldier in the field. These famous deeds atchieued, sent out he was in another expedition, to scoure & cleere all the seas, and so forward into the East parts. From whence he returned with more titles still of honor to his country, after the manner of those that winne victories at the solemne festiuall *Games; for as the victors vse not themselues to accept the chaplets and guirlands in their own names, but to be crowned therwith in the behalf of their natiue countries; euen so, *Pompeius*, in that temple which he caused to be built of the bootie and pillage woon from the enemies, and dedicated to * *Minerva*, entituled the citie with the whole honour, and attributed all to them in an inscription or table engrauen in this manner: *Pompeius the Great, Lord Generall, hauing finished the warres which continued thirtie yeares, during which he had discomfited, put to flight, slaine, or receiued to mercie vpon submission 2183000 men: sunke or taken 846 saile, woon and brought to his deuotion, of cities, townes and castles, to the number of 1538: subdued and put vnder subiection all lands and Nations, betweene the lake Mæotis and the red sea, hath dedicated of right and good desert this temple to Minerva.* This is the briefe and summarie of his seruice in the East. As for the triumph, wherein he rode the third day before the Calends of October, in the yeare wherein *M. Messala* and *M. Piso* were Consuls, the tenure and title ran in this form: Whereas *Cn. Pompeius* hath cleared all the sea coasts from Pyrats and rouers, and thereby recouered vnto the people of Rome the lordship and soueraignetie of the seas; and withall subdued Pontus, Armenia, Paphlagonia, Cappadocia, Cilicia, Syria, the Scythians, Iudæa, and the Albanois: the Iland Creta, and the Bastarnians hath triumphed ouer them all, as also for the vanquishing of the 2 kings *Mithridates* and *Tigranes*. But the greatest glorie of all glories in him was this (as himselfe deliuered openly in a ful assembly, at what time as he discourſed of his owne exploits) That whereas Asia when he receiued it, was the vtmost frontier prouince and limit of the Roman Empire, hee left the same in the very heart & mids therof, and so deliuered it vp to his countrey. Now if a man would set *Cæsar* on the other side against him, & likewise rehearse his noble acts, who indeed of the two seemed greater in the sight of the world, he had need verily to fetch a circuit about the world, and comprehend the whole globe thereof, which were an infinit piece of work, and in all reason impossible.

Olympia Nemæa Pythia, Isthmia.

* Or Victorie.

Chap. XXVII.

¶ *The praise of Cato, the first of that name.*

In sundry other kindes of vertues many men haue diuersly excelled. But *Cato*, the first of the *Porcian* house, was thought to be the only person who was able to perform three things in the highest degree that are most commendable in a man. For first and formost he was a singular

good Oratour: secondly, a most braue captaine and renowned commander in the field: and last of all, a right worthy Senatour and approued counsellor. And yet in my conceit, all these excellent parts seeme to haue shined more bright (although he came after the other) in *Scipio Æmylianus*. To say nothing of this blessed gift besides, that he was not hated and spighted of so many men, as *Cato* was. But if you will seeke for one especiall thinglin *Cato* by himselfe, this is reported of him, That he was judicially called to his answer 44 times, and neuer was there man accused oftner than he, yet went he euer cleare away and was acquit.

Chap. XXVIII.

¶ *Of Valour and Fortitude.*

AN endlesse peece of worke it were to know and set downe who bare the prize for valiancy, & namely if we admit the fabulous tales of poets. As for the poet *Ennius*, he had in greatest admiration. *T. Cæcilius Teucer*, and especially his brother: and in regard of those two, he compiled the sixt booke of his Annales to the rest. But *L. Siccius Dentatus*, a Tribune of the Commons, not long after the banishment of the kings, when *Sp. Tarpeius* and *A. Æternius* were Consuls, by most voices surpasses in this kind, if it be true that a number of men report of him: namely, that he serued in 120 foughten fields: 8 times maintained combate with his enemy, giuing defiance, and euermore got the vpper hand: carrying before him the glorious markes of 45 skarres receiued by wounds, and neuer a one in the backe parts of his body. Moreouer, he woon the spoile of 34 seuerall enemies: and had giuen him of his captains, for his prowesse and good seruice, 18 headlesse speares, 25 caparisons and furnitures of great horses, 83 chains, 160 bracelets for to adorne his arms: 26 crowns, or triumphant chaplets, whereof 14 were ciuick, for rescuing of Roman citizens in jeopardy of death, 8 of beaten gold, 3 other murall, for mounting first ouer the enemies wall: and last of all, one obsidionall, for enforcing the enemy to leuie and breake vp his siege and depart; also with a stipend or pension-fee out of the Exchequer & chamber of the city; and lastly, the prise or ransom of ten prisoners, with 20 oxen besides to make vp the reward; and in this glorious pompe and shew he followed nine captain Generals going before him, who by his means triumphed all. Ouer and besides (which I suppose was the worthiest act that euer he did) he accused in open court before the body of the people, one commander and great captaine, named *T. Romulus* (notwithstanding he had bin a Consul) and conuicted him for his ill management and conduct of the wars. As for *Manlius Capitolinus*, he wan as many honourable testimonies of valour, but that he lost them all again, with that vnhappy end of his life that he made. Before he was full 17 yeres of age, hee had gained already two complete spoiles of his enemies. He was the first Roman knight or man of armes, that was honored with a murall crowne of gold for scaling ouer the wall in an assault; with six ciuicke chaplets for sauing the life of citizens six times out of the enemies hands. Moreouer, he receiued 37 gifts of the people for his good seruice, and carried the skars in the fore-part of his body of 33 wounds. He rescued *P. Seruilius*, Generall of the Roman Cauallerie, & in the rescue was himselfe wounded for his labor, in shoulder and thigh both. Aboue all other hardy acts, he alone guarded and defended the Capitoll, and thereby the whole State of Rome, against the Gaules: a braue piece of seruice, but that he marred all againe in aspiring to be king ouer the same. In these aboue rehearsed examples, certes vertue hath carried a great stroke, but yet fortune hath been the mightier, and preuailed more in the end. And in my iudgement verily, none may right & iustly prefer any man before *M. Sergius*; albeit *Catiline* his nephewes son discredited that name of his, & derogated much from the honor of his house. The second time that he went into the field and serued, his had was to lose his right hand: and in two other seruices hee was wounded no fewer than 23 times: by meanes whereof hee had little vse of either hand, and his feet stood him in no great stead. Howbeit, thus maimed and disabled as hee was for to be a souldiour, hee went many a time after to the warres, attended with one slaue onely, and performed his deuoire. Twise was he taken prisoner by *Annibal* (for he dealt not I may tell you with ordinary enemies) and twise brake he prison and made escape, notwithstanding, that for twentie moneths space he was euery day ordinarily kept bound with chaines and fetters. Foure times fought hee with his left hand onely, vntill two horses one after another, were killed vnder him. Then hee made himselfe a right hand of yron, which he fastened to his arme, and fighting with the help of it, he raised

raised the siege from before Cremona, and saued Placentia. In France he forced 12 fortified camps of the enemies. All which exploits appeare vpon record in that Oration of his which he made in his Pretorship, at what time as his Colleagues and companions in gouernement would not permit him to be at the solemne sacrifices, because he had a maim, and wanted a lim But what heaps of crowns and chaplets, thinke you, would he haue gathered together, if he had bin committed and matched with any other enemies but *Annibal*? Certes, to know a man of worth indeed, much materiall it is to consider in what time hee liueth, and is imploied, for the proofe of his valour. For what store of ciuick coronets and garlands, yeelded either the battell of Trebia and Ticinus, or of Thrasymenus the lake? What crowne could haue bin gained and woon at the iourney of Cannæ, where the best seruice was by good footmanship to flie & run away? To conclude, all others may vaunt verily, that they haue vanquished men; but *Sergius* may boast, that he hath conquered and ouercome euen Fortune her selfe.

Chap. XXIX.

¶ *The commendation of some men for their quicke wits.*

WHo is able to make a muster as it were of them that haue been excellent in wit: so difficult a matter it is to run through so many kinds of sciences, and to take a survey of curious handi-workes in such varietie, of most rare and singular artifices? Vnlesse haply we agree vpon this, and say, that *Homer* the Greeke poet excelled all other, considering either the subiect matter, or the happy fortune of his worke. And hereupon it was, that *Alexander* the Great (for in this so proud a censure and comparison, I shal do best to cite the iudgment of the highest, and of those that be not subiect to enuie) hauing found among the spoils of *Darius* the king, his perfumier or casket of sweet ointments, and the same richly imbellished with gold and costly pearls and precious stones, when his friends about him shewed him many vses whereto the said coffer or cabinet might be put vnto, considering that *Alexander* himselfe could not away with those delicate perfumes, being a warriour, and slurried with bearing armes, and following warfare: when, I say, his gallants about him could not resolue well what seruice to put it to: himselfe made no more ado but said thus, I will haue it to serue for a case of *Homers* bookes: judging hereby, that the most rare and precious worke proceeding from that so admirable a wit of man, should be bestowed and kept in the richest box and casket of all others: the same prince, in the forcing and saccage of the citie of Thebes, caused by expresse commandement, That the dwelling house & whole family of *Pindarus* the Poet should be spared. He built againe the natiue city wherein *Aristotle* the Philosopher was borne: and in so glorious a shew of his other worthy deeds, would needs intermingle this testimony of his bounty, in regard of that rare clerke who gaue light to all things in the world. The murderers of *Archilochus* the poet, the very Oracle of *Apollo* at Delphi disclosed and reuealed. When *Sophocles* the prince of all tragicall Poets was dead in Athens, at what time as the citie was besieged by the Lacedæmonians, god *Bacchus* appeared sundry times by way of vision in a dreame to *Lysander* their king, admonishing him to suffer his delight, and him whom he set most store by, for to be enterred. Whereupon the king made diligent enquirie who lately was departed this life in Athens: and by relation of the citizens soone found it out and perceiued who it was that the foresaid god meant, and so gaue them leaue to bury *Sophocles* in peace, and to performe his funeralls without any molestation or impeachment.

Chap. XXX.

¶ *Of Plato, Ennius, Virgil, M. Varro, and M. Cicero.*

Denis the tyrant, borne otherwise to pride and cruelty, being aduertised of the comming and arriuall of *Plato*, that great clerke and prince of learning, sent out to meet him a ship adorned with goodly ribbands, and himselfe mounted vpon a charriot drawne with foure white horses, receiued him as if he had bin a K. at the hauen, when hee dis barked and came aland. *Isocrates* sold one Oration that he made for 20 talents of gold. *Æschines* that famous orator of Athens in his time, hauing at Rhodes rehearsed that accusatorie oration which he had made

made against *Demosthenes*, read withall his aduersaries defence againe; by occasion wherof he was confined to Rhodes, and there liued in banishment: and when the Rhodians that heard it wondred thereat; Nay (qd. *Æschines*) you would haue maruelled much more at it, if you had heard the man himselfe pronouncing it, & pleading *Viua voce*: yeelding thus as you see a notable testimony of his aduersary, in the time of his aduersitie. The Athenians exiled *Thucidides* their Generall Captaine: but after he had written his Chronicle, they called him home again, wondring at the eloquence of the man, whose vertue and prowesse they had before condemned. The KK. of Egypt and Macedonie gaue a singular testimony how much they honoured *Menander* the Comicall poet, in that they sent Embassadors for him, and a fleet to waft him for his more securitie: but he wan vnto himselfe more fame and glory by his owne setled iudgement, for that he esteemed more of his owne priuat study and following his book, than of all those fauors offered vnto him from great princes. Moreouer, there haue bin great personages and men of high calling at Rome, who haue shewed the like in token, how they esteemed and regarded the learned crew of forrein nations. *Cn. Pompeius*, after he had dispatched the war against *Mithridates*, intended to go and visit *Posidonius*, that renowned professor of learning; and when hee should enter into the mans house, gaue streight commandement to his Lictors or Huishers, that they should not (after their ordinary maner with all others) rap at his dore; and this great warriour, vnto whom both the East and West parts of the world had submitted, vailed bonet, as it were, and based his armes and ensignes of state which his officers carried, before the verie dore of this Philosopher. *Cato*, syrnamed *Censorius*, vpon a time when there came to Rome that noble embassage from Athens, consisting of three, the wisest sages among them; when hee had heard *Carneades* speake (who was one of those three) gaue his opinion presently, That those embassadors were to be dispatched and sent away with all speed; for feare least if that man argued the case, it would be an hard piece of worke to found and find out the truth, so pregnant were his reasons, and so witty his discourses. But Lord! what a change is there now in mens manners and dispositions! This *Cato*, the renowned Censor, both now and at all times else, could not abide to haue any Grecian within Italy, but alwaies gaue iudgement to them all in generall to be expelled: but after him there comes his nephew once remoued, or his nephewes sonne, who brought one of their Philosophers ouer with him when he had bin military Tribune or knight marshall: and another likewise vpon his embassage to Cypres. And verily a wonder it is and a memorable thing to consider how these two *Catoes* differed in another point: for the former of them could not away with the Greek tongue, the other that killed himselfe at Vtica, esteemed it as highly. But to leaue strangers, let vs now speak of our own countrimen, so renowned in this behalfe. *Scipio Africanus* the elder, gaue expresse order, and commanded, That the statue of *Q. Ennius* the poet should be set ouer his tomb, to the end, that the great name and stile of *Africanus*, or indeed the booty rather that hee had woon and carried away from a third part of the world, should in his monument vpon the reliques of his ashes be read together with the title of this poet. *Augustus Cæsar* late Emperor, expressely forbad that the Poeme of *Virgil* should be burned, notwithstanding that he by his last will and testament on a modesty, gaue order to the contrary: by which means there grew more credit and authority vnto the Poet, than if himself had approued and allowed his owne verses. *Asinius Pollio* was the first that set vp a publicke Library at Rome, raised of the spoile and pillage gained from the enemies. In the Library of which gentleman, was erected the image of *M. Varro*, euen whiles he liued: a thing that won as great honor to *M. Varro* in mine opinion (considering that amongst those fine wits, whereof a great number then flourished at Rome, his hap only was to haue the garland at the hands of a noble citizen and an excellent Orator beside:) as that other nauall crowne gained him, which *Pompey* the Great bestowed vpon him for his good seruice in the pyrats war. Infinite examples more there are of vs Romans, if a man would seeke after them and search them out: for this only nation hath brought forth more excellent and accomplished men in euery kinde, than all the lands besides of the whole world. But what a sin should I commit, if I proceeded farther and speake not of thee, O *M. Cicero*? and yet how should I possibly write of thee according to thy worthinesse? would a man require a better proofe of thy condigne praises, than the most honorable testimony of the whole body of that people in generall, and the acts onely of thy Consulship, chosen out of al other vertuous deeds throughout thy whole life? Thine eloquence was the cause that all the Tribes renounced the law *Agraria*, as touching the diuision of Lands among

among the commons, albeit their greatest maintenance and nourishment consisted therein. Through thy persuasion they pardoned *Roscius*, the first author of that seditious bill and law, whereby the States and degrees of the city were placed distinctly in their seats at the Theatre: they were content I say, and tooke it well, that they were noted and pointed at for this difference in taking place and rowms, which he first brought in. By means of thy orations, the children of proscript and outlawed persons were ashamed and abashed to sue for honorable dignities in common-weale: thy witty head it was that put *Catiline* to flight, and banished him the city: thou, and none but thou didst out-law *M. Antonius*, and put him out of the protection of the State. All haile therefore, O *M. Tullius*, faire chieue thee, thou that first was saluted by the name of *Parens patriæ*, *i.* Father of thy countrey: first that deserued triumpth in thy long robe, & the laurel garland, for thy language: the only father indeed of eloquence & of the Latin tongue: and (as *Cæsar* Dictator somtime thine enemy hath written of thee) hast deserued a crown aboue all other triumphs, by how much more praise-worthy it is, to haue amplified and set out the bounds and limits of Roman wit and learning, than of Roman ground and dominion.

Chap. XXXI.

¶ *Of a certaine Maiestie in behauiour and cariage.*

THose, who among other gifts of the minde haue surpassed other men in sage aduise and wisdome, were thereupon at Rome surnamed *Cati*, and *Corculi*. In Greece, *Socrates* carried the name away from all the rest, being deemed by the Oracle of *Apollo Pythius*, the wisest man of all others.

Chap. XXXII.

¶ *Of Authoritie.*

AGaine, *Chilo* the Lacedemonian was of so great reputation among men, that his sayings were held for Oracles; and three precepts of his were written in letters of gold, & consecrated in the temple of *Apollo* at Delphi: where the first was this, *Know thy selfe*: the second, *Set thy minde too much on nothing*. The third, *Debt and Law are alwaies accompanied with misery*. His hap was to die for ioy, vpon tidings that his son wan the best prize, and was crowned victour at the solemne game Olympia; and when he should be interred, all Greece did him honour, and solemnized his Funerals.

Chap. XXXIII.

¶ *Persons of a diuine spirit and heauenly nature.*

AMong women, *Sybilla* was excellent at diuination, and for a certaine fellowship and societie with cœlestiall wights, of great name. As for men, among the Greeks, *Melampus*: and with vs Romans, *Martius*, carried as great an opinion.

Chap. XXXIV.

¶ *Scipio Nasica.*

SCipio Nasica was iudged once by the Senat (sworne to speak without passion and affection) to be the best & honestest man that euer was from the beginning of the world: howbeit the same man, as vpright as he was, suffered a repulse and disgrace at the peoples hands in his white Robe when he sued for a dignity; and to conclude, in the end his hap was not to depart this life in his owne countrey; no more than it was the will of God that *Socrates* the wisest man (so deemed by the Oracle of *Apollo*) should die out of prison.

Chap. XXXV.

¶ *Of Chastitie.*

SVlpitia, daughter of *Paterculus*, and wife to *Fulvius Flaccus*, by al the voices in general of Roman dames, carried away the prize for continencie, and was elected out of the hundred principall matrons of Rome to dedicate and consecrate the image of *Venus*, according to

and ordinance out of *Sybils* bookes. *Claudia* likewise, was by a religious and deuout experiment proued to be such another, at what time as she brought the mother of the gods, *Cybele* to Rome.

Chap. XXXVI.

¶ *Of Pietie or kindenesse.*

IN all parts verily of the world, there haue been found infinite examples of naturall loue and affection, but one example thereof at Rome hath been knowne singular aboue all others, and incomparable. There was a poore young woman of the common sort, and therefore base and of no account, who lately had been in childbed, whose mother was condemned to perpetuall prison, and there lay, for some great offence that she had committed: this daughter of hers and young nource aforesaid, obtained leaue to haue accesse vnto her mother, and euermore by the gaoler was narrowly searched for bringing to her any victuall, because her iudgment was to be famished to death: thus she went and came so long, vntill at last she was found suckling of her mother with the milke of her breasts. This was reputed for such a strange and wondrous example, that the mother was released and giuen to the daughter for her rare piety and kindnes: both of them had a pension out of the city allowed them for their amintenance for euer; and the place where this hapned was consecrated to *Pietie*: in so much, as when *C. Quintius* and *M. Acilius* were Consuls, there was a temple to her built, in the very place where this prison stood, iust whereas now standeth the Theatre of *Marcellus*. The father of the *Gracchi* happened to light vpon and take two serpents within his house, whereupon he sent out to the Sooth-sayers for to know, what this thing might presage? who made this answer, That if he would himselfe liue, the female snake should be killed; Nay marry (qd. he) not so, but rather kill the male; for my wife *Cornelia* is yong enough, and may haue more children. This said he, meaning to spare his wiues life, in consideration of the good she might do to the common-weale. And in truth; like as the wizards propheised, so it fell out soone after, and their words tooke effect. *M. Lepidus* so entirely loued his wife *Apuleia*, that he died for very thought and griefe of heart, after shee was diuorced from him and turned away. *P. Rutilius* chanced to be somewhat ill at ease and sickish, but hearing of his brothers repulse, and that hee was put by his Consulship (for which he stood in suit) died suddenly for sorrow. *P. Catienus Philotimus* so loued his Lord and master, that notwithstanding he was by him made his sole heire of all that euer he had, yet for kind heart, cast himselfe into the funerall fire to be burnt with him.

Chap. XXXVII.

¶ *Of diuers excellent men in many Arts and Sciences, and namely in Astrologie, Grammer, and Geometrie.*

IN the skill and knowledge of sundry Sciences, an infinit number of men haue excelled; howbeit, we wil but take the very floure of them all, and touch those only whom meet it is to be named for their speciall desert. In Astrologie, *Berosus* was most cunning; in so much as the Atheniens for his diuine predictions and prognostications, caused his statue with a golden tongue, to be erected in the publicke schoole of their Vniuersitie. For Grammer, *Apollodorus* was singular, and therefore was highly honored of the States of Greece, called Amphictyones. In Physicke, *Hippocrates* excelled, so far forth as by his skill hee foretold of a pestilence that should come out of Sclauonia; and for to cure and remedie the same, sent forth his disciples and schollers to all the cities about. In recompence of which good desert of his, all Greece by a publick decree ordained for him the like honors, as vnto *Hercules*. For the very same cunning and science, king *Ptolome* gaue vnto *Cleombrotus* of Cea (at the solemne feast holden in the honour of the great mother of the gods) a hundred talents, and namely for curing the king *Antiochus*. *Critobulus* likewise acquired and got himselfe a great name, for drawing an arrow forth of king *Philips* eie, and curing the wound when he had don, so as the sight remained, & no blemish or deformity appeared. But *Asclepiades* the Prusian, surpassed all others in this kind, who was the first author of that new sect which bare his name, reiected the embassadors, the large promises & fauors offered of K. *Mithridates*: found out the way and means to make wine wholesome and medici-

medicinable for sicke folke: and recouered a man to his former state of health, who was caried forth vpon his biere to be buried: and lastly he attained the greatest name; for laying a wager against fortune, and pawning his credit so farre as he should not be reputed a Physitian, in case he euer were known to be sicke or any way diseased. And in truth the wager hee woon; for his hap was to liue in health vntill he was very aged, and then to fall downe from a paire of staires, and so to die suddenly. A singular testimonie of skill and cunning *M. Marcellus* gaue vnto *Archimedes* that notable Geometrician and Enginer of Syracusa, who in the saccage and rifling of that city gaue expresse commandement concerning him alone, that no violence should be done vnto him: howbeit hee will failed of his execution, by occasion of a souldier, who in that hurly-burly slew him, not knowing who he was. Much commended and praised is *Ctesiphon* of Gnosos, for his notable knowledge in Architecture, and namely for the wonderful frame of *Dianaes* Temple at Ephesus. *Philon* likewise was highly esteemed for making the Arcenall at Athens, able to receiue 1000 ships. *Ctesibius* also was much accounted of for deuising winde Instruments; and by means of certain engins to draw and send water to any place. *Dinocrates* also the enginier eternised his name for casting the plot and deuising the modell of Alexandria in Egypt, at what time as *Alexander* the great founded it. To conclude, this mighty prince and commander *Alexander* streightly forbad by expresse edict, That no man should draw his pourtrait in colours but *Apelles* the painter: that none should engraue his personage but *Pyrgoteles* the grauer: and last of all, that no workman should cast his image in brasse but *Lysippus* a Founder. In which three feats many Artifans haue excelled for their rare workmanship.

Chap. XXXVIII.

¶ *Singular works of Artificers.*

KIng *Attalus* cheapned one picture wrought by the *Aristides* Theban, and 100 talents for it. *Cæsar* the Dictator offered to *Timomachus* eight talents for two pourtraits, to wit, of *Medea* and *Aiax*, which he meant to set vp and consecrate in the temple of *Venus Genetrix*. King *Candaules* bought of *Butarchus* a painted table, wherein was drawne the defeature and destruction of the Magnetes, which tooke vp no great roome, and weighed out the poise thereof in good gold. King *Demetrius*, sirnamed *Expugnator*, [*i.* the conqueror and great forcer of cities] forbare to set Rhodes on fire, because he would not burne one painted table the handiworke of *Protogenes*. *Praxiteles* was innobled for a rare Imager and cutter in stone and marble: he eternised his memoriall by making one image of *Venus* for the Gnidians, so liuely, that a certaine yong man became so amorous of it, and so doted thereon, that he went beside himselfe: which piece of worke was esteemed of such worth by *Nicomedes*, that whereas the Gnidians owed him a great sum of money, he would haue taken it for full paiment of the whole debt. The statue of *Iupiter Olympius* is to be seen, and dayly commendeth the workman *Phydias*. *Iupiter* likewise *Capitolinus*, and *Diana* in Ephesus yeeld good testimonies of *Mentors* cunning: and the tooles or instruments of the said workeman were consecrared (for their exquisit making) vnto them in their temples, and there remaine.

Chap. XXXIX.

¶ *Of Seruants and Slaues.*

I Haue not knowne or heard to this day, of a man borne a slaue, that was prised so high as *Daphnis* the Grammarian was: for *Cn. Pisaurensis* held him at 300700 Sesterces to *M. Scaurus* a great and principall man of Rome. Howbeit in this our age certain stage players haue gon beyond this price, and that not a little: mary they were such as had bought out their freedome before, and were not then slaues. And no maruell, for we finde vpon record, that the great Actor *Roscius* in former time might yerely dispend by the stage 500000 Sesterces. Vnlesse a man desire in this place to heare of the Treasurer and purueior general of the army in Armenia for the late wars of King *Tyridates*, who was infranchised by means of *Nero*, for 120000 Sesterces, but it was the war that cost thus much, and not the man. Like as *Sutorius Priscus* gaue vnto *Scianus* 3500 Sesterces for *Pæzon* one of his gelded Eunuchs: For a man would say that this was

was more to satisfie his filthy lust, than for any special beauty to be seen in the said *Person*. But he tooke the vantage of the time, and went cleare away with this impious villanie: for at what time as he bought him, the city was in perplexitie and sorrow, and no man for thinking of greater affaires and troubles, had any leisure to finde fault or say a word in reproofe of such enormities.

Chap. XL.

¶ *The excellencie of Nations.*

Doubtlesse it is, and past all question, that of all Nations vnder the Sun, the Romans excell and are the only men for all kinde of vertues. But to determine who is the happiest man in all the world is aboue the reach of humane wit; considering that some take contentment and repose felicitie in this thing, others in that, and euery one measureth it according to his seuerall fancy and affection: but to say a truth, and iudge aright indeed, laying aside all the glosing flatteries of fortune, and without courting her to determin this point, There is no man to be counted happy in this world. Right well it is on our side, and Fortune dealeth in exceeding fauor with vs, if we may not iustly be called vnhappy: for put case there be no other miserie and calamitie besides, yet surely a man is euer in feare lest Fortune will frowne vpon him, and do him a shrewd turne one time or other: and admit this feare once, there can be no sound happinesse and contentment in the minde. What shall I say moreouer than this, that no man is at all times wise and in his perfect wits? Would God that this were taken of most men for a Poets word only, and not a true saying indeed. But such is the vanity and folly of poore mortall men, that they flatter themselues, and are very witty to deceiue themselues, making their accounts and reckonings of good and euill fortune like to the Thracians, who by certain white and blacke stones which they cast into a certaine vessell, and there laid vp for the better proofe and triall of euery dayes fortune; and at the last day and time of their death they fall to parting these stones one from another, and telling them apart, and according to the number of the white and blacke, giue iudgement and pronounce of each ones fortune. But what say they to this, that many times it falleth out, that the day marked with a white stone, for a good day, had in it the beginning & ouerture of some great misfortune and calamitie? How many men haue seemed to fall into Fortunes lap, and entred vpon great empires and dominions, which in the end turned to their afflictions and miseries? How many haue we seen ouerthrowne, punished extremely, and brought to vtter ruine, euen by means of their owne good parts and commendable gifts? Certes these be good things & great fauors, if a man could make ful account to enioy them but one houre with contentment. But thus verily stands the case, and this is the ordinary course of this world: one day is the iudge of another, and the day of death iudgeth and determineth all: and therefore there is no trust in them, neither may wee assure our selues of any. To say nothing of this, that our good fortunes are not in number equall to our bad: and say there were as many of the one as of the other, Is there any one ioy to be weighed in true ballance against the least grief and sorrow that commeth? Foolish and fortish men that we are for all our curiositie! for we reckon our daies by tale and number, whereas we should ponder and peise them by weight.

Chap. XLI.

¶ *Of the highest tipe and pitch of felicity.*

Lampido the Lacedemonian Lady is the only woman that euer was knowne to haue beene daughter to a King, a Kings wife, and mother to a King. Also *Pherenice* was known alone to be the daughter, sister, and mother to them that wan the victorie and carried away the best prise at the Olympian games. In one house and race of the *Curices* there were known three excellent Orators one after another by discent from the father to the son. The only family and line of the *Fabij* afforded three Presidents of the Senat in course, one immediatly vnder another, to wit, *M. Fabius Ambustus* the father, *Fabius Rullianus* the son, and *Q. Fabius Gurges* the nephew.

CHAP.

Chap. XLII.

¶ *Examples of Fortunes mutabilitie.*

Infinite other examples we haue of the varietie and inconstancie of Fortune: for what great ioyes to speake of, gaue she euer, but vpon some mishap or other? Again, the greatest miseries and calamities that haue bin, haue they not ensued vpon the most ioyes and contents.

Chap. XLIII.

¶ *Of one twice outlawed and out of protection: as also of Q. Metellus and L. Sylla.*

Fortune preserued for 36 yeares *M. Fidustius* a Senator, outlawed by *Sylla*: yet hapned hee afterward to be outlawed the second time; for he out-liued *Sylla*, and continued vnto the time of *Marcus Antonius*: and for certain it is knowne, that by him hee was banished and outlawed againe, for no other reason but because he had been so before-time. So kind was Fortune to *P. Ventidius*, as that she would haue him to triumph alone ouer the Parthians: but shee had before time so good as played with him, when shee saw him led (being a boy) as prisoner in *Cn. Pompeius Strabo* his triumph for the defeature and ouerthrow of the Asulanes. Although *Massurius* testifieth, that he was so led in triumph as a slaue twice: *Cicero* saith, that hee was at first but a Mulitier, and draue mules laden with meale for the oven, to serue the campe. Many other affirme, that in his youth hee was a poore souldier, and serued as a footman in his single trouses and greaues. Moreouer, such good fortune had *Balbus Cornelius*, as to the senior Consull and declared Elect before his fellow: but before time he had beene in trouble, and iudicially accused, yea and a Iury was impanelled to go vpon him, so as he was in danger to be whipped, vpon their verdict. Well, this mans hap for all this was to be the first Roman Consull of Forreiners, and namely Islanders within the main Ocean: he (I say) attained to that honor, which our forefathers denied flatly to the Latines their neighbors. Among other notable examples, *L. Fulvius* may go for one, who was Consull of the Tusculans when they reuolted and rebelled against the Romans: howbeit forsaking his owne citizens, and returning to Rome, was presently by the whole people aduanced to the same honour amongst them, and he was the man alone knowne to haue triumphed in Rome ouer them whose Consull he was, euen the same yere that he himselfe was as a Roman enemie in the field. *L. Sylla* was the only man vntill our time that challenged vnto himselfe the syrname of *Felix*. But how was hee adopted as it were into this name, forsooth euen by shedding and spilling so much innocent bloud of Roman citizens, and by waging war against his natiue country? And whereupon I pray you grounded he this happinesse of his, and had so great an opinion thereof, if this were not it, that he was able to banish, that he was able to banish, confiscate, and put to death so many thousand citizens? O false and deceitfull interpretation, dangerous, vnhappy, and pernicious euen to posteritie and the time to come! For were not they more blessed and happy, who then fortuned to lose their liues, (whose death at this day we pitty, and whom we take compassion of) than *Sylla*, whom all men at this day hateth and abhorreth? Moreouer, was not his end more cruell and horrible than the sorrow of all those that by him were outlawed, and their goods forfeit? for his owne wretched body did eat, gnaw, and consume it selfe, and bred daily and hourely lothsome vermine to put the same to paine and torment. And say that he dissembled all this, and would not be knowne of it; and suppose we gaue credit that last dreame of his (wherein he lay as it were dead or in a trance) vpon which he gaue out this speech, that himselfe and none but he had the glory to surmount all enuy: yet in this one thing he plainly confessed that his felicitie came short & was defectiue, in that he had not time to consecrate the Capitoll Temple. *Q. Metellus* in that funerall oration of his which he made in praise and commendation (as the maner was) of *L. Metellus* his father, gaue these laudable reports of him, that he had been the soueraigne Pontifie or high-Priest of Rome, twice Consull, Dictator, Generall of the horse, one of the fifteen Quindecemvirs deputed for diuision of lands among the souldiers and Commons: and that in the first Punicke warre he shewed many Elephants in a triumph: moreouer he left in writing, that hee had accomplished ten of the greatest and best points belonging to this life: in the seeking whereof

whereof and in attaining thereunto,all the great Sages of the world spend their whole life: for (saith he)his desire was, and he thereto aimed,namely,to be a most doubty and hardy warrior, an excellent orator,a right valiant captaine and commander: also,to haue the conduct,charge, and execution of the greatest and most important affaires, to be in the highest place of honor, to be singular in wisdome,to be accounted the principall and chiefe in Senat,to come to great riches by good and lawful means,to leaue much faire issue behind him: and to conclude,to be simply the best man of all other,and the principall person in the city. To these perfections he (and none but he since Rome was Rome) attained. Now to confute this were a long and needlesse piece of worke,considering that one only mischance checked these fauors of Fortune,and fully disproued all: for the very same *Metellus* became blinde in his old age, for hee lost his eies in a skare-fire,at what time hee would haue saued and got away the *Palladium,i.* Image of *Minerua*,out of the temple of *Vesta*. His act I confesse was vertuous and memorable, but the event was ill for him and miserable. In regard whereof I know not how he should be called vnhappy and wretched: and yet I see not why he should be named happy and fortunate. This I must needs say in conclusion,that the people of Rome granted vnto him that priuiledge, that neuer man in the world was knowne to haue,namely,to ride in his coach to the Senat house so oft as he sate at the councell table. A great prerogatiue I confesse, and most stately, but it was allowed him for want of his eyes.

Chap. XLIV.

¶ *Of another Metellus.*

A Sonne likewise of this *Q. Metellus*,who gaue out those commendations aforesaid of his father,may be put in the ranke of the most rare presidents of felicitie in this world: for besides the most honorable dignities and promotions hee was aduanced vnto in his life time,and the glorious addition and syrname of *Macedonicus*,which he got in Macedonie; when he was dead,there attended vpon his dead corps at his funerals to inter him,foure of his sons; the one Pretor for the time being; the other three had been Consuls in their time: & of these three,two had triumphed in Rome,and the third had been Censor. These were points, I may tell you,of great note and regard,and few men are to be found in comparison, that can come to any one of them. And yet see! in the very prime and floure of all these honors,it fortuned that *Catinius Labeo*,syrnamed *Macerio*,a Tribune or protector of the Commons (whom he before by vertue of his Censorship had displaced out of the Senat) waited his time when he returned about noone from *Mars* field,and seeing no man stirring in the market place,nor about the Capitoll,tooke him away perforce to the cliffe Tarpeius,with a full purpose to pitch him downe headlong from thence and to breake his necke. A number came running about him, of that crue and company which was woont to salute him by the name of Father; but not so soone as such a case required,considering this so sudden an occurrent: and when they were come,went but slowly about any rescue,and kept a soft pace,as if they had waited vpon some corps to a buriall; and to make resistance and withstand perforce the Tribune, armed as he was with his sacrosanct and inuiolable authoritie,they had no warrant by Law: insomuch as hee was like to haue perished and come to a present mischiefe,euen for his vertue, and faithfull execution of his Censorship, had there not been one Tribune of ten found, hardly and with much adoe to step between and oppose himselfe against his Collegue, and so by good hap rescued him out of his clutches, and saued him as it were at the very pits brinke, enen from the vtter point of death. And yet he liued afterwards of the courtesie and liberalitie of other men: for why, All his goods from that day forward were seised as forfeit and confiscate, by that Tribune whom before-time he had condemned: as if hee had not suffered punishment and sorrow enough at his hands,to haue his necke so wrythed by him, as that the bloud issued out at his very eares. Certes for mine owne part I would reckon this for one of his crosses and calamities, That hee was an enemie to the later *Africanus Æmylianus*,euen by the testimonie and confession of *Macedonicus* himselfe: for after the death of the said *Africanus*, these were his words vnto his owne sonnes; Go your waies sirs and do honour to his Obsequies,for the funerall of a greater personage, and a better Citizen, shall you neuer see. And this spake he to them when as they had conquered Creta and the Baleare Islands, and thereof were syrnamed *Creticus* and *Balearicus*, and

and had worne the lawrell diadem in triumph; being himselfe already entituled with the stile of *Macedonicus*,for the conquest of Macedonie. But if we consider and weigh that onely wrong and iniurie offered him by the Tribune,who is it that can iustly deeme him happy,being exposed as he was to the pleasure,mercy,and force of his enemie, far inferior to *Africanus*, and so to come to confusion? What were all his victories to this one disgrace? what honors and triumphant chariots strooke not Fortune downe with her foot,and ouerturned all againe, or at least wise set not back again with this her violent course, suffering a Roman Censor to be haled and tugged in the very heart of the city (the only way indeed to bring him to his death) to be harried I say vp to that capitoll hill there to make his end,whither aforetime hee ascended triumphant,but neuer committed that outrage vpon those prisoners and captiues whom hee lead in triumph,and for whose spoiles he triumphed, as to hale and pull them in that rude sort? And verily the greater was this outrage,and seemed the more heinous, in regard of the felicity that afterward ensued: considering,that this *Macedonicus* was in danger to haue lost so great an honor as he had in his solemne and stately sepulture, namely when he was caried forth to his funerall fire by his triumphant children,as if he had triumphed once again at his buriall. In sum, that can be no sound and assured felicitie that is interrupted with any indignitie or disgrace whatsoeuer: much lesse by such an one as this was. To conclude,I wot not well whether there be more cause to glory for the modest cariage of men in those daies, or to grieue at the indignitie of the thing,in that among so many *Metelli* as there were, so audacious a villanie as this was of *Catinius* was neuer reuenged vnto this day.

Chap. XLV.

¶ *Of Augustus Cæsar late Emperor.*

As touching the late Emperor *Augustus*, whom all the world rangeth in this ranke of men fortunat: if we consider the whole course of his life we shal find the wheele to haue turned often, and perceiue many changes of variable fortune. First, his owne vncle by the mothers side put him by the Generalship of the horse; and notwithstanding all his earnest suit preferred *Lepidus* to that place before him: secondly,he was noted and thought hardly of for those outlawries of Roman citizens,and thereby purchased himselfe much hatred and displeasure: tainted also he was for being one of those three in the Triumvirate, yoked and matched with wicked companions and most dangerous members to the weal publique: and this galled him the more,that in this fellowship,the Roman empire was not equally and indifferently parted among them three, but *Antonie* went away with the greatest share by odds. Also his ill fortune was in the battell before Philippos to fall sicke,to take his flight, and for three daies,diseased as he was,to lurke and lie hidden within a marish: whereupon (as *Agrippa* and *Mecænas* confesse) he grew into a kinde of dropsie, so as his belly and sides were puffed vp and swelled with a waterish humor,gotten and spred betwixt the flesh and the skin. Furthermore,he suffered shipwrecke in Sicily, and there likewise he was glad to skulk within a caue in the ground. What should I say, how when he was put to flight at sea,and the whole power of his enemies at his heeles,he besought *Proculeius* in that great danger to rid him out of his life: how he was perplexed for the quarrels and contentions at Perusium: in what feare and agonie hee was in the battell of Actium(a towne of Albanie)as also for the issue of the Pannonian warre, for the fall of a bridge and a towne both. So many mutinies among his soldiers; so many dangerous diseases: the iealousie and suspition that he had euermore of *Marcellus*: the reproch & shame he sustained for confining and banishing *Agrippa*: his life so many times laid for,by poison and other secret traines: the death of his children, suspected to haue bin by indirect meanes: the double sorrow and grief of heart thereby,and not altogether for his childeles estate. The adulterie of his owne daughter, and her purpose of taking his life away,detected and published to the World: the reproch full departure and slipping aside of *Nero* the sonne of his Wife: another adulterie commited by one of his owne Neeces. Ouer and aboue all this,thus many more crosses and troubles comming one in the necke of another: namely,want of pay for his souldiers, the rebellion of Sclauonia, the mustering of slaues and bond-seruants to make vp his army, for want of other able youths to leuy vnto the warres: Pestilence in Rome Citie: famin and drought vniuersally throughout Italy: and that which more is,a deliberat purpose

and

and resolution of his to famish and pine himselfe to death, hauing to that end fasted 4 dayes and 4 nights; and in that time receiued into his body the greater part of his owne death. Besides, the ouerthrow and rout of *Varius* his forces, the foule staine and blemish to the touch of his honor and maiestie very neere: the putting away of *Posthumius Agrippa* after his adoption, and the misse that he had of him after his banishment: then, the suspition that hee conceiued of *Fabius* for disclosing his secrets: adde hereto the opinion and conceit he tooke of his owne wife and *Tiberius*, which surpassed all his other cares. To conclude, that god, and he who I wot not whether obtained heauen, or deserued it more, departed this life, and left behinde him as heire to the crowne his enemies sonne.

Chap. XLVI.

¶ *Whom the gods iudge most happy.*

I Cannot ouerpasse in this discourse and consideration the Oracles of Delphos, deliuered from that heauenly god to chastise and represse as it were the folly and vanitie of men: and two there be which giue answer to the point in question after this manner: First, that *Phedius*, who but a while before died in the seruice of his countrey, was most happy. Moreouer, *Gyges* (the most puissant king in those daies of all the earth) sent a second time to know of the Oracle, who was the happiest man next him: and answer was made, That *Aglaus Psophidius* was happier than the former. Now this *Aglaus* was a good honest man well stept in yeares, dwelling in a very narrow corner of Arcadia, where he had a little house and land of his own, sufficient with the yearely commodities thereof to maintaine him plentifully with ease, out of which hee neuer went, but employed himselfe in the tillage and husbandry thereof, to make the best benefit he could: in such sort that (as it appeared by that course of life) as he coueted least, so he felt as little trouble and aduersitie while he liued.

Chap. XLVII.

¶ *Who was canonised a god here vpon earth liuing.*

BY the ordinance and appointment of the same Oracle, as also by the ascent and approbation of *Iupiter* the soueraigne god, *Euthymus* the famous wrestler (who alwaies wan the best prize at Olympia saue once) was reputed and consecrated a god whiles he liued, and knew thereof: born he was at Locri in Italy, where one statue of his, as also another at Olympia, were both in one day stricken with lightning: whereat I see *Callimachus* wondred, as if nothing else were worthy admiration, and gaue order that he should be sacrificed vnto as a god: which was performed accordingly both whiles he liued, and after hee was dead. A thing that I maruell more at than any thing else, That the gods were therewith contented, and would permit such a dishonour to their maiestie.

Chap. XLVIII.

¶ *Of the longest liues.*

THe terme and length of mans life is vncertaine, not only by reason of the diuersity of climats, but also because Historians haue deliuered such varietie of mens ages, and euerie man by himselfe hath a seuerall time limited vnto him at the very day of his birth. *Hesiod* (the first writer, as I take it, who hath treated of this argument, and yet like a Poet) in his fabulous discourse touching the age of man saith forsooth, that a crow liues nine times as long as we; and harts or stags 4 times as long as hee, but Rauens thrice as long as they. As for his other reports touching the Nymphs and the bird Phœnix, they are more like poeticall tales, than true relations. *Anacreon* the Poet maketh mention, that *Argantonius* king of the Tartessians, liued 150 yeares: and *Cynaras* likewise King of the Cyprians ten yeares longer. *Theopompus* affirmeth, that *Epimenides* the Gnossian died when he was 157 yeares old. *Hellanicus* hath written, That amongst the Epians in Ætolia there be some that continue full two hundred years: and with him accordeth *Damascs*: adding moreouer, that there was one *Pictoreus* among them, a man of exceeding stature, mighty and strong withall, who liued three hundred yeares *Ephorus*,

A *Ephorus* testifieth, that ordinarily the kings of Arcadia were 300 yeares old ere they died. *Alexander Cornelius* writeth of one *Dando* a Sclauonian, who liued 500 yeres. *Xenophon* in his treatise of old age, makes mention of a King of the Latines, or as some say, ouer a people vpon the sea coasts, who liued 600 yeares; and because he had not lied loud enough already, he goes on still and saith, that his son came to 800. All these strange reports proceed from the ignorance of the times past, and for want of knowledge how they made their account; for some reckoned the Summer for one yeare, and the Winter for another. There were againe that reckoned euery quarter for a yeare, as the Arcadians, whose yeare was but three moneths. Ye shall haue some, and namely the Egyptians, that count euery change or new Moon for a yeare: and therefore no
B maruell if some of them are said to liue 1000 yeares. But to passe from these vncertainties, to things confessed and doubtlesse. Held it is in maner for a certain truth, that *Argantbinus* King of Calis reigned full 80 yeares, and it is thought he was 40 yeares old when he came vnto the crowne. And as vndoubted true it is, that *Masanissa* ware the crown 60 yeares. As also that *Gorgias* the Sicilian liued vntill he was 108 yeares old. As for *Q. Fabius Maximus* (a Roman) hee continued Augure 63 yeares. *M. Perpenna*, and of late daies *L. Volusius Saturninus*, out liued all those Senators which sate in councell with them when they were Consuls, and whose opinions they were wont to aske. As for *Perpenna*, when hee died, hee left but 7 of those Senators aliue, whom he had either chosen or re-elected in his Censorship: and he liued himselfe 98 yeares. Where by the way one thing commeth into my mind worth the noting, That one Lustrum or
C 5 yeares space there was, and neuer but one, in which there died not a Roman Senator, and that was from the time that *Fluccus* and *Albinus* the Censors finished their suruey, & solemnly purged the city after the order, to the comming in of the next new Censors; being from the foundation of Rome 579 yeres. *M. Valerius Corvinus* liued 100 yeares complete: between his first and sixt Consulate were 46 yeares; he tooke his seat vpon the yuorie chaire of estate, and was created a magistrate Curule 21 times; and no man else so often. *Metellus* the Pontifie or soueraigne priest liued full as long as he.

To come now to women: *Liuia* the wife of *Rutilius* liued 97 yeares with the better. *Statilia* a noble lady of Rome, in the time of *Claudius* the Emperor, was knowne to be 99 yeares of age. *Ciceroes* wife *Terentia* out-liued her husband vntill she was 103 yeres old. *Clodia* wife to *Ofilius*,
D went beyond her, and saw 115 yeres, & yet she had in her youth 15 children. *Lucceia* a common vice in a play, followed the stage and acted thereupon 100 yeares. Such another vice that plaid the foole & made sport between whiles in interludes, named *Galaria Copiola*, was brought again to act her feats vpon the stage, when *Cn. Pompeius* and *Q. Sulpitius* were Consuls, at the solemne plaies vowed for the health of *Aug. Cæsar* the Emperor, in the 104 yere of her age: the first time that euer she entred the stage, to shew proofe of her skil in that profession, was 91 yeres before, and then she was brought thither by *M. Pomponius* an Ædile of the Commons, in the yere that *C. Marius* and *Cn. Carbo* were Consuls. And once again *Pompeius* the Great, at the solemne dedication of his stately Theatre, trained the old woman to the stage for to make a shew, to the wonder of the world. Moreouer, *Asconius Pædianus* is mine Author, that one *Samula* liued 110
E yeares; and therefore I maruell the lesse, that one *Stephanio* (who was the first of the long robe that brought dancing and footing vpon the stage) plaid his part & danced in both the Secular plaies, as well those that were set out by *Augustus* late Emperor, as which *Claudius* exhibited in his 4 Consulate, considering that between the one and the other there were but 63 yeares: and yet liued *Stephanio* many a day after. *Mutianus* witnesseth, that in Tempsis (for so is the crest or pitch of the mountain Tmolus called) folke liued ordinarily 150 yeares. At that age *T. Fullonius* of Bononia entred his name into the Subsidie book, at the time that *Cl. Cæsar* held the generall tax: and that he was so old indeed, appeared truly as wel vpon record in the registers office, by conferring and laying together seueral paiments by him made from time to time, as also by certain things he had seen and known done in his life time (for the Emperor had a speci-
F all care and regard, that way to find out the truth.)

Chap. XLIX. *Of diuers Horoscopes or Natiuities of men.*

THis point would require the conference and aduice of Astrologers: for *Epigenes* saith, it is not possible for a man to liue 122 yeres: and *Berosus* is of opinion, that one canot passe 117. The proportion and reckoning holdeth still for good, which *Petosiris* and *Nesepsos*

calculated and grounded vpon their Quadrant, which they call *Tetartemorion*, that is to say, the compasse in the Zodiaque of three signes: Orientall, which determine of the life or death of men, according to which account it is euident, that in the tract or clymat of Italy men may reach to 126 yeares. The aboue-named Astrologers affirmed, that a man could not possibly passe the space of 90 degrees from the Ascendent or erection of his natiuitie (which they call Anaphoras) and that euen this course through the degrees of three signes, is many times interrupted and cut short, either by the opposition and encounter of some wicked planets, or by the maligne aspects of them or the Sun. On the other side, *Asclepiades* and his sect affirme, that the length of our life proceedeth from the influence of the [fixed] stars: but as touching the vtmost terme thereof they set downe nothing definitiuely: mary thus much they say, That the fewer sort of men liue any long time; for that the greatest number by far haue their natiuitie incident and liable to the dangerous houres and time, either of the moones occurrence (as in her Quadrature, Opposition, and Sextile aspect) or of daies according to the number of seuen or nine (which are daily and nightly marked and obserued:) whereupon ensueth the rule of the dangerous graduall yeares, called Clymactericke: and such as are in that wise borne, lightly liue not aboue 54 yeares. And here we may see by the doubtfulnesse and incertitude of this science of Astrologie, how vncertain this whole matter is which we haue in hand. Moreouer, wee found the contrarie by experience and many examples; and namely in the last taxation, numbring, and review of the prouinces subiect to Rome within Italy, that was taken vnder the *Cæsars Vespasians*, the father and the sonne, both Emperors and Censors. And here we need not to search euery corner, and to ransacke euery place very narrowly; we will onely giue instance and set downe the examples of the one moity thereof, namely that tract which lieth betweene Apennine and the Po. At Parma three men were found that liued sixe score yeares: at Brixels, one that liued 125 yeares: at Plaisance one elder by a yeare: at Faventia there was one woman that liued 125 yeares: at Plaisance one elder by a yeare: at Faventia there was one woman 132 yeares old: at Bononie, *L. Terentius* the sonne of *Marcus*; and at Ariminum, *M. Aponius*, reckoned each of them 150 yeares. *Tertulla* was knowne to be 137 yeares old. About Plaisance there is a towne scituate vpon the hills, named Velleiacium, wherein six men brought a certificate, that they had liued an hundred yeares apiece: foure likewise came in with a note of an hundred and twenty yeares: one, of an hundred and fourteene, namely *M. Mutius*, son of *Marcus*, named *Galerius fœlix*. But because we will not dwell long in a matter so euident and commonly confessed: in the review taken of the eighth region of Italy, there were found in the rolle 54 persons of an hundred yeares of age: 57 of an hundred and ten: two, of 125: foure of 130: as many that were 135 or 137 yeares old: and last of all, three men of an hundred and fortie. But let vs leaue these ages, and consider a while another inconstant variety in the nature of mortall men: *Homer* reporteth, that *Hector* and *Polydamas* were borne both in one night, men so different in nature and qualitie. Whiles *C. Marius* was Consull and *Cn. Carbo* with him, who had been twice before Consull, the fifth day before the calends of Iune, *M. Cæcilius Ruffus* and *C. Licinius Calvus* were borne vpon a day, and both of them verily proued great Orators: but they sped not alike, but mightily differed one from another in the end. And this is a thing seen daily to happen throughout the World, considering that in one houre kings and beggars are borne, likewise lords and slaues.

Chap. L.

¶ *Sundry examples of diuers Diseases.*

Prob. Cornelius Rufus, who was Consul together with *M. Curius*, dreamed that he had lost his sight, and it proued true indeed, for in his sleep he became blind & neuer saw again. Contrariwise *Phalereus*, [or *Iason Phereus*] being giuen ouer by the Physitions for an impostume he had in his chest, in despaire of all health (purposing to kill himselfe for to be rid out of his paine) stabbed his breast with a knife: but he found this deadly enemy to be his onely Physition. *Q. Fabius Maximus* being long sicke of a quartane Ague, strucke a battell with the People of Sauoy and Auvergne neere the riuer Isara, vpon the sixth day before the Ides of August, wherein

A wherein he slew of his enemies 13000, and therewith was deliuered from his feuer, and neuer had it after. Certes this gift of life that we haue from nature, be it more or lesse, is fraile & vncertain; and say that it be giuen to any in largest measure, it is but scant yet, and very short, yea and of but small vse, if wee consider the whole course thereof from the beginning to the end. For first, if we count our repose and sleep in the night season, a man can be truly said to liue but halfe his life; for surely a good moity and halfe deale thereof which is spent in sleeping, may be likened well to death: and if he cannot sleep, it is a pain of all pains, and a very punishment. I reckon not in this place the yeares of our infancie, which age is void of reason and sense; ne yet of old age, which the longer it continueth, the more are they plagued that be in it. What B should I speake of so many kindes of dangers, so many diseases, so many feares, so many pensiue cares, so many prayers for death, as that in maner we pray for nothing oftner? In which regards how can a man be said to liue the while? and therefore Nature knoweth not what better thing to giue a man than short life. First and formost, the senses wax dull, the members and limmes grow benummed, the eye sight decaieth betimes, the hearing followeth soone after, then faile the supporters, the teeth also and the very instruments that serue for our food and nourishment; and yet forsooth all this time so full of griefe & infirmities is counted a part of our life. Hereupon it is taken for a miraculous example, and that to which again we cannot find a fellow, that *Xenophilus* the musitian liued 105 yeares, without any sicknesse or defect in all his body. For all other men, beleeue me, are vexed at certain houres (like as no other creatures besides) with C the pestiferous heats and shaking colds of the feuer in euery ioynt, sinew, and muscle of the bodie, which go and come, keeping their times in their feuerall fits, not for certain houres in the day only, but from one day to another, and from night to night; one while euery third day or night, otherwhiles euery fourth, yea and somtime a whole yeare together. Moreouer, what is it but a very disease, to know the time and houre of a mans death, and so to die forsooth in wisedome? For maladies there be in which Nature hath set down certain rules and lawes: namely a quartaine feuer neuer lightly begins in the shortest daies of the yeare, neither in the 3 moneths of winter [to wit, December, Ianuarie, Februarie.] Some diseases are not incident to those that are aboue 60 yeares of age: others againe do end and passe away when youths begin to be vndergrowne, and especially this is obserued in yong maidens. Moreouer, old folke of all other are least subiect to take the plague. Furthermore, sicknesses there be that follow this re- D gion or that, assailing and infecting the inhabitants generally therein. There be some againe that surprise and take hold of seruants only, both all and some: others touch the best persons alone of the highest calling, and so from degree to degree. But in this place obserued vsually it is by experience, That a pestilence beginning in the South parts, goeth alwaies towards the West, and neuer lightly but in winter, neither continueth it aboue three moneths.

Chap. LI.

¶ *Of the signes of death.*

E Now let vs take a view of deadly tokens in sicknes: in rage and furious madnesse, to laugh is a mortall signe: in frenzie, wherein men are bestraught of their right wits, to take care of the skirts, fringes, and welts of their garments; that they be in good order; to keepe a fumbling and pleiting of the bed-cloathes, the neglect of such things as would trouble them in their sleepe, and breake it: the voluntarie letting go of their water; prognosticate death. A man may see death also in the eyes and nose most certainly of all other parts: as also in the maner of lying, as namely when the patient lieth alwaies on his backe with his face vpward. We gather signes also by the vneuen stroke of the arterie; as also when the pulse beateth so vnder the physitians hand as if he felt an ant creeping vnder it. Other signes also there be, which *Hippocrates* the prince and chief of all Physitions hath very wel obserued and set down. Now where- F as there be an infinite number of signes that presage death; there is not one knowne than can assure a man certainly of life and health. For *Cato* that famous Censor, writing to his sonne as touching this argement, hath deliuered, as it were out of an Oracle, That there is an obseruation of death to be collected euen in them that are in the most perfect health: for (saith hee) youth resembling age, is a certaine signe of vntimely death or short life. As for diseases, they

are so innumerable, that *Pherecydes* of the Iland Syros died of a great quantity of Lice that came crawling out of his body. Some are knowne to be neuer free from the Ague, as *C. Mecœnas*. The same man for three yeares before hee died neuer laid his eies together for sleepe a minute of an houre. *Antipater Sidonius* the Poet, once a yeare during his life had an ague fit vpon his birth day: he liued for all that to be an old man, and vpon the day of his nativitie died in such a fit.

Chap. LII.

¶ *Of such as were carried forth vpon the Biers to be buried, and reuiued againe.*

Aviola, one that had bin Consull, came again to himselfe when he was cast or put into the funerall fire to be burnt: but because the flame was so strong that no man could come neere to recouer him, he was burnt quicke. The like accident befell to *Lu. Lamia*, Pretor lately before. As for *C. Ælius Tubero*, that he was brought aliue again from the like fire, after he had bin Pretor of Rome, both *Messala Rufus* and many besides constantly affirme. See how it goeth with mortall men: see, I say, our vncertaine state and condition, and how we are born, exposed, and subiect to these and such like occasions of fortune: insomuch as in the case of man there is no assurance at all, no not in his death. We reade in Chronicles, that the ghost of *Hermotimus Clazomenius* was woont vsually to abandon his body for a time, and wandering vp and downe into far countries, vsed to bring him newes from remote places, of such things as could not possibly be knowne vnlesse it had bin present there: and all the while his body lay as halfe dead, in a trance. This manner it continued so long, vntill the Cantharidæ, who were his mortall enemies, tooke his body vpon a time in that extasie, and burnt it to ashes; and by that meanes disappointed his poore soule when it came backe againe, of that sheath, as it were, or case where she meant to bestow her selfe. Moreouer, we finde in records, that the spirit or ghost of *Aristæas* in the Iland Proconnesus, was seen euidently to fly out of his mouth in forme of a Rauen; and many a like tale followeth thereupon. For surely I take it to be no better than a fable, which is in like manner reported of *Epimenides* the Gnosian, namely, that when he was a boy, he being for heate and trauell in his iourney all wearie, laid him downe in a certain caue, where he slept 57 yeares. At length he wakened as it were vpon the next morning, and wondred at such a sudden change of euery thing he saw in the world, as if hee had taken but one nights sleepe. Hereupon, forsooth, in as many daies after as he slept yeares, he waxed old. Howbeit he liued in all 175 yeares. But to returne to our former discourse, women of all others by reason of their sex are most subiect to this danger, to be reputed for dead when there is life in them: and namely because of the disease of the matrice called the rising of the Mother: which if it be brought againe, and settled streight in the place, they soone recouer and take breath againe. Not impertinent to this treatise is that notable and elegant booke among the Greeks compiled by *Heraclides*, where he writeth of a woman that for a seuen-night lay for dead, and fetched not her breath sensibly, who in the end was raised againe to life. Moreouer *Varro* reporteth, that vpon a time when the twenty deputy Commissioners were diuiding lands in the territory of Capua, there was one there carried forth vpon his bier to be burnt, and came home again vpon his feet. Also, that the like hapned at Aquinum. Likewise, that in Rome one *Corfidius*, who had maried his owne Aunt by the mothers side, after he had taken order for his funeralls, and set out a certaine allowance therefore, seemed to yeeld vp his ghost and die: howbeit hee reuiued againe, and it was his chance to carry him forth indeed vnto buriall, who had prouided the furniture before for his funerall. This *Varro* writeth besides of other miraculous matters, which verily are worth the rehearsall at large. One of them is this: Two brethren there were, by birth and calling gentlemen of Rome; whereof the elder, named *Corfidius*, hapned in all appearance to die: and when his last will and testament was once opened and published, the yonger brother (who was his heire) was very busie and ready to set forward his funerall. In the mean time the man who seemed dead fell to clap one hand against another, and therewith raised the seruants in the house: when they were come about him, he recounted vnto them, that he was come from his yonger brother, who had recommended his daughter to his tuition and guardenage: and moreouer, had shewed and declared vnto him, in what place he had secretly hidden certain gold

A gold vnder the ground, without the priuity of any man; requesting him withal to imploy that funerall prouision which he had prepared for him, about his own buriall and sepulture. As he was relating this matter, his brothers seruitors came in great hast to this elder brothers house, and brought word their master was departed this life: and the treasure before-said was found in the place accordingly. And verily there is nothing more common in our daily speech, than of these diuinations; but they are not to be weighed in equall ballance with these, nor to be reported or credited all so confidently, forsomuch as for the most part they are meere lies, as we will proue by one notable example. In the Sicilian voiage it fortuned that *Gabienus*, one of the braueſt seruitors that *Cæsar* had at sea, was taken prisoner by *Sex. Pompeius*, and by commandement from him his head was stricken off in a maner, and scarce hung to the neck by the skin, B and so lay he all day long vpon the sands in the shore. When it grew toward euening, and that a great companie were flocked about him, he fetched a great groane, and requested that *Pompeius* would come vnto him, or at leastwise send some one of his deare familiars that were neere vnto him. And why? Come I am (quoth he) from the infernal spirits beneath, and haue a message to deliuer vnto him. Then *Pompey* sent diuers of his friends to the man, vnto whom *Gabienus* related in this maner; That the infernall gods were well pleased with the iust quarrell and cause of *Pompey*, and therefore he should haue as good issue therof as he could wish. This, quoth he, was I charged and commanded to deliuer. And for a better proofe of the truth in effect, so soon as I haue done mine errand I shall forthwith yeeld vp the ghost And so it hapned indeed. Histories also make mention of them that haue appeared after they were committed to earth. C But our purpose is to write of Natures works, and not to prosecute such miraculous end prodigious matters.

Chap. LIII.

¶ *Of sudden Deaths.*

As for sudden death, that is to say, the greatest felicitie and happines that can befall man, many examples wee haue thereof that alwaies seeme strange and maruellous; howbeit they are common. *Verrius* hath set forth a number of them, but I will keepe within a meane, and make choice of them all. Besides *Chilon* the Laced emonian, of whom we spake before, he died suddenly for very ioy, *Sophocles* the poet, and *Dionis* a king or tyran of Sicily: both D of them vpon tydings brought vnto them, that they had won the best prise among the tragical Poets Presently after that famous defeat at Cannæ, a mother died immediatly vpon the sight of her son aline, whom by a false messenger she heard to haue bin slain in that battell. *Diodorus* a great professed Logician, for very shame that hee could not presently assoile a friuolous question, nor answer to some demands proposed by *Stilbo*, swouned and neuer came again. Without any apparant cause at all that could be seen, diuers haue left their life: namely two of the *Cæsars*, the one Pretor for the time being, the other who had borne that dignity, the father of *Cæsar* the Dictator: both of them in the morning when they were new risen, and putting on their shooes, the one at Pisæ, the former at Rome. In like maner *Q. Fabius Maximus* in his very Consulship, vpon the last day of December, [which was the last also of his magistracie, had hee E liued longer] in whose place *Rebilus* made sute to be Consull for a very few houres that remained of that yere. Semblably *C. Fulcatius Gurgius* a Senator. All of them in perfect health, so lustie and well liking that they thought to go forth presently, and of nothing lesse than to dy before. *Q. Æmylius Lepidus*, euen as he was going out of his bed chamber, hit his great toe against the dore sill, and therewith died. *C. Aufidius* was gotten forth of his house, and as he was going to the Senat, stumbled with his foot in the Comitium or common place of assemblies, and died in the place. Moreouer, a certain Embassador of the Rhodians, who had to the great admiration of all that were present, pleaded their cause before the Senat, in the very entry of the Councell house, as he was going forth, fell downe dead and neuer spake word. *Cn. Bæbius Pamphilus*, who had bin Pretor, died suddenly as he was asking a boy what it was a clocke. *A. Pompeius*, so soon as he had worshipped the gods in the Capitoll, and said his Orasons, immediately died. So did *M. Iuventius Talva* the Consull, as hee was offering sacrifice. And *Caius Seruilius Pansa*, as hee stood at a shop in the market place about eight of the clocke in the morning, leaning vpon his brother *P. Pansa* his shoulders. *Bæbius* the Iudge, as hee was adiourning

ning the day of ones appearance in the court. *M. Terentius Corax*, whiles he was writing letters G
in the market place. No longer since than the very last yeare, a Knight of Rome, as hee was talking with another that had been Consul, and rounding him in the eare, fell downe starke dead. And this hapned before the yvorie statue of *Apollo*, which stands in the Forum of *Augustus*. But aboue all others it is strange, that *C. Iulius* a Surgeon should die as he was dressing of a sore eie with a salue, and drawing his instrument along the eye. What should I say of *L. Manlius Torquatus*, a man who had bin somtime Consul, whose hap was to die sitting at supper, euen in reaching for a cake or wafer vpon the boord. *L. Durius Valla* the physition died whiles he was drinking a potion of mede or sweet honied wine. *Appius Aufeius* being come out of the Baine, after he had drunk a draught of honied wine, as he was supping off a rere egge died. *P. Quintius Scapula* as he was at supper in *Aquillius Gallus* his house. *Decimus Saufeius* the Scribe, as he sate at H
dinner in his owne house. *Cornelius Gallus*, one who had bin Lord Pretor, and *T. Ætherius* a Roman Knight, died both in the very act of *Venus*, whiles they lay vpon women. The like befell in our daies to two gentlemen of Rome, who died both as they were dealing contrary to nature with one and the same counterfeit Iester named *Mithycus*, a youth in those daies of surpassing beauty. But of all others, *M. Ofilius Hilarus*, an actor and plaier in comedies, as it is reported by antient writers, died most secure of death, & with the greatest circumstances about it: for after he had much delighted the people, & made them sport to their contentment on his birth day, he kept a feast at home in his house; and when supper was set forth vpon the table, hee called for a messe of hot broth in a pottinger to drinke off; and withall casting his eye vpon the maske or visor he put on that day, fitted it for his visage, and tooke off the chaplet or garland from his I
bare head, and set it thereupon: in this habit, disguised as he sate, hee was starke dead and key cold before any man perceiued it: vntill he that leaned next vnto him at the boord put him in minde of his pottage that it cooled, and making no answer, they found in what case he was.

These examples all be of happy deaths: but contrariwise there be an infinite number that are as miserable & vnfortunat. *L. Domitius*, a man descended of a most noble house and parentage, being vanquished by *Cæsar* before Marseils, and taken prisoner at Corfinium by the same *Cæsar*; for very irksomnesse of his tedious life, poisoned himselfe: but after he had drunke the poison, repented of that which he had done, and did all that euer hee could to liue still, but in vaine. We finde vpon record in the publique registers, that when *Felix* one of the carnation or flesh-coloured liuery that ranne with chariots in the great cirque or shew-place was had forth K
dead to be burnt, one of his fauorits and consorts flung himselfe into his funerall fire for company. A friuolous and small matter it is to speak of; but they of the other part that sided with the aduerse faction of other liueries, because this act should not turne to the honor and credit of their concurrent the actiue Chariotier aboue named, gaue it out and said, that this his friend and wel-willer did not do it for any loue he bare him, but that his head was intoxicate with the strong sauor of the incense and odors that were in the fire, and so being beside himselfe, wist not what he did. Not long before this chanced, *M. Lepidus*, a gentleman of Rome descended of a most noble family, who (as is aboue said) died for thought and griefe of heart that hee had diuorced his wife, was by the violent force of the flame cast forth of the funerall fire; & because of the extreme heat thereof, no man could come neere to lay his corps again in the place where L
it was & should be: they were fain to make another fire hard by of dry vine cuttings, and such like sticks, and so he was burnt bare and naked as he was.

Chap. LIIII.

¶ *Of Buriall or Sepulture.*

TO burne the bodies of the dead hath bin no antient custome among the Romans: the maner was in old time to inter them. But after they were giuen once to vnderstand, that the corses of men slain in the wars afar off, and buried in those parts, were taken forth of the earth again, ordained it was to burne them. And yet many families kept them still to the old M
guise and ceremonie of committing their dead to the earth: as namely the house of the *Cornelij*, whereof there was not one by report burned before *L. Sylla* the Dictator, and he willed it expressely, and prouided for it before hand, for feare himselfe should be so serued as *C. Marius* was, whose corps he caused to be digged vp after it was buried. Now in Latine he is said to be

A be *Sepultus*, that is bestowed or buried any way, it makes no matter how: but *humatus* properly, who is interred only, or committed to the earth.

Chap. LV.

¶ *Of the Ghosts, or spirits of men departed.*

AFter men are buried, great diuersitie there is in opinion, what is become of their souls & ghosts, wandering some this way, and others that. But this is generally held, that in what estate they were before men were born, in the same they remain when they are dead. For neither body nor soule hath any more sence after our dying day, than they had before the day of our natiuitie. But such is the folly & vanitie of men, that it extendeth stil euen to the future
B time, yea, and in the very time of death flattereth it selfe with fond imaginations, and dreaming of I know not what life after this: for some attribute immortality to the soule: others deuise a certain transfiguration therof: & there be again who suppose, that the ghosts sequestred from the body, haue sense; whereupon they do them honour and worship, making a god of him that is not so much as a man. As if the maner of mens breathing differed from that in other liuing creatures; or as if there were not to be found many other things in the World, that liue much longer than men, and yet no man iudgeth in them the like immortality. But shew me what is the substance and body as it were of the soule by it selfe? what kind of matter is it apart from the body? where lieth her cogitation that she hath? how is her seeing, how is her hearing per-
C formed? what toucheth she? nay, what doth she at al? How is she employed? or if there be in her none of all this, what goodnesse can there be without the same? But I would know where shee setleth and hath her abiding place after her departure from the body? and what an infinit multitude of souls like shadows would there be, in so many ages, as well past as to come? how surely these be but fantastical, foolish, and childish toies; deuised by men that would faine liue alwaies, and neuer make an end. The like foolery there is in preseruing the bodies of dead men: & the vanity of *Democritus* is no lesse, who promised a resurrection thereof, and yet himself could neuer rise again. And what a folly is this of all follies to think (in a mischief) that death should be the way to a second life? what repose and rest should euer men haue that are borne of a wo-
D man, if their soules should remain in heauen aboue with sence, whiles their shadows tarried beneath among the infernall wights? Certes, these sweet inducements and pleasing persuasions, this foolish credulitie and light beliefe, marreth the benefit of the best gift of Nature, to wit, Death, it doubleth besides the paine of a man that is to die, if he happen to thinke and consider what shall betide him the time to come. For if it be sweet and pleasant to liue, what pleasure and contentment can one haue, that hath once liued, and now doth not. But how much more ease and greater securitie were it for each man to beleeue himselfe in this point, to gather reasons, and to ground his resolution and assurance vpon the experience that he had before hee was borne.

Chap. LVI.

E ### ¶ *The first inuenters of diuers things.*

BEfore we depart from this discourse of mens nature, me thinks it were meet and conuenient to shew their sundry inuentions, and what each man hath deuised in this world. In the first place, prince *Bacchus* brought vp buying and selling: he it was also that deuised the diadem that royall ensigne and ornament, and the manner of triumph. Dame *Ceres* was the first that shewed the way of sowing corne, whereas before-time men liued of mast. She taught also how to grind corne, to knead dough, and make bread thereof, in the land of Attica, Italy, and Sicily; for which benefit to mankind, reputed she was a goddesse. She it was that beganne to make lawes, how soeuer others haue thought, that *Rhadamanthus* was the first law giuer. As for
F Letters, I am of opinion, that they were in Assyria from the beginning time out of mind; but some thinke, and namely *Gellius*, that they were deuised by *Mercurie* in Ægypt: but others say they came first from Syria. True it is that *Cadmus* brought with him into Greece from Phœnice to the number of sixteen, vnto which, *Palamedes* in the time of the Troian war added foure more in these characters following, Θ. Ξ. Φ. Χ. And after him *Simonides Melicus* came with other foure,

foure,to wit,Z.H.Y.Ω, the force of all which letters we acknowledge and see euidently expressed G
in our Latine Alphabet. *Aristotle* is rather of mind, that there were 18 letters in the Greeke
Alphabet from the beginning,namely, A.B.Γ.Δ.E.Z.I.K.Λ.M.N.O.Π.P.Σ.T.Υ.Φ,and that the other two Θ and
and X. were fet to by *Epicharmus*, and not by *Palamedes*. *Anticlides* writeth, That one in Egypt
named *Menon*,was the inuentor of letters,fifteene yeares before the time of *Phoroneus*, the moſt
antient king of Greece,and he goeth about to proue the ſame by antient records and monu-
ments out of hiſtories. Contrariwiſe, *Epigenes*,an author as renowned, and of as good credit as
any other,ſheweth, That among the Babylonians there were found Ephemerides containing
the obſeruation of the ſtars, for 720 yeares,written in bricks and tiles: and they that ſpeake of
leaſt,to wit,*Berоſus* and *Critodemus*,report the like for 480 yeares. Whereby it appeareth eui-
dently,that letters were alwaies in vſe,time out of mind. The firſt that brought the Alphabet H
into Latium or Italy,were the Pelaſgians. *Eurydus* and *Hyperbius*,two brethren at Athens, cau-
ſed the firſt bricke and tile-kils,yea,and houſes thereof to be made:whereas before their time
men dwelt in holes and caues within the ground. *Gellius* is of opinion, that *Doxius* the ſonne of
Cœlus,deuiſed the firſt houſes that were made of earth and cley: taking his patterne from Swal-
lowes and Martins neſts. *Cecrops* founded the firſt towne that euer was, and called it after his
owne name Cecropia: which at this day is the caſtle or citadell in Athens. Some will haue
that Argos was built before it,by king *Phoroneus*. And others againe, that Sycione was before
them both. And the Ægyptians affirme, That long before that, their city Diоſpolis was foun-
ded. *Cinyra*,the ſonne of *Agriopa* deuiſed tiling and flating of houſes firſt, as alſo found out
the braſſe mines;both within the Iſle Cyprus. He inuented alſo pinſers,hammers,yron crowes,
and the Anuil or Stithe. *Danaus* ſunk the firſt pits for wels in Greece, which then was called I
Argos Diрſion;& ſailed out of Egypt thither,for that purpoſe. *Cadmus* at Thebes(or, as *Theo-
phraſt*.ſaith) in Phœnice,found out ſtone quarries firſt. *Thraſon* was the firſt builder of towne
wals:of towers & fortreſſes,the Cyclops,as *Ariſtotle* thinketh: but the Tyrinthians according
to *Theophraſt*. Weauing was the inuention of the Egyptians:and dying wool,of the Lydians in
Sardis. *Cloſter* the ſon of *Arachne* taught the firſt making of the ſpindle for woollen yearne: and
Arachne her ſelfe was the firſt ſpinner of flax thred, the weauer of linnen,and of nets. *Niceas* the
Megarean deuiſed the fullers craft. *Boethius* ſhewed the art of ſowing,as wel for tailors as Cor-
viners and ſhoomakers. The Egyptians would haue the skill of phyſicke to haue bin firſt a-
mong them:but others affirme, That *Arabus* the ſon of *Babylon* & *Apollo*,was the author thereof. K
The firſt Herbariſt and Apothecarie, renowned for the knowledge of ſimples, & compoſition
of medicines,was *Chiron*,ſon of *Saturne* & *Phyllira*. *Ariſtotle* thinketh,that *Lydus* the Scythian
taught the feat of caſting and melting braſſe, with the tempering alſo of the ſame: howbeit,
Theophraſtus ſaith it was *Delas* the Phrygian. As for the forges & furnaces of braſſe,ſome think
the Chalypes deuiſed,others attribute that to the Cyclopes. The diſcouery of the yron and
ſteel mines,as alſo the working in them,was the inuention(as *Heſiodus* ſaith)of thoſe in Creet,
who were called Dactyli Idæi. Likewiſe of ſiluer, *Erichthonius* the Athenian beareth the name,
or(after ſome) *Aeacus*. The gold mines,together with the melting and trying therof,*Cadmus* the
Phœnician firſt found out neere the mountain Pangæus:but there be that giue the praiſe here-
of to *Thoas* & *Aeacus* in Panchaia: or els to *Sol* the ſon of *Oceanus*, to whom *Gellius* attributeth L
the inuention of Phyſick,and making hony. *Midacritus* was the firſt man that brought lead out
of the Iſland Caſſiteris. And the Cyclopes inuented firſt the yron-ſmiths forge. *Corœbus* the A-
thenian deuiſed the potters craft,ſhewing how to caſt earthen veſſels in moulds,& bake them
in furnaces. And therin, *Anacharſis* the Scythian,or after ſome, *Hyperbios* the Corinthian, inuen-
ted the caſt of turning the roundel or globe. Carpenters art was the inuention of *Dædalus*,as al-
ſo the tools thereto belonging,to wit,the ſaw,the chip-axe,and hatchet,the plumb line;the au-
guer and wimble,the ſtrong glew,as alſo fiſh-glew,and ſtone-Saudre. As for the rule & ſquare,
the leuell,the turners inſtrument,and the key, *Theodorus Samius* deuiſed them. *Phidon* the Ar-
giue,or *Palamedes* as *Gellius* rather thinketh,found out meaſures and weights. *Pyrodes* the ſon of M
Cilix,deuiſed the way to ſtrike fire firſt out of the flint;and *Prometheus*,the means to preſerue &
keep it in a ſtalke of *Ferula*,or Fennell gyant. The Phrygians inuented firſt the wagon & cha-
riot with foure wheeles. As for trafficke and merchandiſe,the Carthaginians had the firſt ho-
nour thereof. *Eumolpus* the Athenian was of name for planting, pruning, and cutting vines:
alſo for ſetting and graffing trees. *Staphylus* the ſonne of *Silenus* taught men how to delay wine
with

A with water. *Ariſtæus* the Athenian inuented the making of oyle oliue, as alſo the preſſe & mill
thereto belonging. The ſame man taught the caſt of drawing hony out of the combs. *Buzyges*
the Athenian,or as others would haue it, *Triptolemus*, yoked oxen firſt for tillage of the ground,
and deuiſed the plough. The Egyptians were the firſt of al men that were gouerned by the mo-
narchy;and the Athenians,by a popular ſtate. After the reigne of *Theſeus*, the firſt king or ty-
rant was *Pandarus*,at Agrigentum in Sicily. The Lacedæmonians brought in bondage and ſla-
uery, firſt. The firſt iudgement that paſſed for life and death,was in the court Ariopagus at A-
thens. The firſt battell that euer was fought,was between the Africanes and Egyptians; & the
ſame performed by baſtons,clubs,& coulſtaues,which they call Phalangæ. Shields, bucklers,
B and targets were deuiſed by *Pratus* and *Amiſtus*,when they warred one againſt the other:or els
by *Calchus* the ſon of *Athamas*. *Midias* of Meſſene made the firſt cuirace. And the Lacedæmo-
nians, the mourian, the ſword, and the ſpeare. The Carians deuiſed the grieues,the creſts, and
pennaches vpon helmets. *Scythes* the ſon of *Iupiter*,deuiſed bow & arrowes: although ſome ſay
that *Perſes* the ſon of *Perſeus* inuented arrows. The Ætolians inuented the launce and the pike:
the dart with a loup, *Ætolus* the ſon of *Mars*,deuiſed. As for the light iauelins, and the Partui-
ſanes, *Tyrrhenus* brought them firſt into vſe: & *Penthеſilea* the Amazon-queene,the gleiue,bill,
battell-axe,and halbard. *Piſeus* found out the bore-ſpeare and chaſing ſtaffe. Among engines of
artillery,the Cretes inuented the Scorpion or croſſe-bow:the Syrians,the Catapult:the Phœ-
nicians the baliſt or brake,and the ſling. *Pyſeus* the Tyrrhenian brought vp the vſe of the braſen
C trumpet:and *Artenon Clazomenius* of the pauois,mantilets,targuet-roofs, for the aſſault of ci-
ties. The engine to batter wals(called ſometime the horſe,and now is named the ram)was the
deuiſe of *Epeus* at Troy. *Bellerophon* ſhewed firſt how to ride on horſeback. *Peleithronius* inuented
ſaddle,bridle,and other furniture for the horſe. The Theſſalians called Centaures, inhabiting
neere to the mountain Pelius,were the firſt that fought on horſeback. The Phrygians deuiſed
firſt to driue and draw a chariot with two horſes; *Erichthonius*, with foure. *Palamedes* inuented
(during the Troian war) the manner of ſetting an army in battell array: alſo the giuing of ſig-
nall,the priuie watch-word, the *Corps de guard*, the watch and ward. In the time of the ſaid war,
Simon deuiſed the ſentinels and watch-towers,as alſo the eſpiall. *Lycanor* was the firſt maker of
true e. *Theſeus* of leagues and alliances. *Car*,of whom Caria tooke the name, obſerued firſt the
D flight and cry of birds,and thereby gaue preſages and fore-tokens. *Orpheus* went farther in this
skil,and tooke marks from other beaſts. *Delphus* pried into beaſts inwards,and therby foretold
things to come. *Amphiaraus* was the firſt that had knowledge in Pyromancie,& gathered ſigns
by ſpeculation of fire: like as *Tyreſias* the Thebane,by the feeding and geſture of birds. *Am-
phictyon* gaue the interpretation of ſtrange and prodigious ſights,as alſo of dreames. *Atlas* the
ſon of *Libya*(or as ſome ſay,the Egyptians;& as others,the Aſſyrians) inuented Aſtrology:& in
that ſcience *Anaximander* deuiſed the Sphere. As for the knowledge & deſtinction of the winds
Æolus the ſon of *Hellen*,he profeſſed it firſt. *Amphion* brought muſicke firſt into the world. The
flute and the ſingle pipe or recorder were the inuentions of *Pan*, the ſon of *Mercurie*. The croo-
ked cornet, *Midas* in Phrygia deuiſed. And in the ſame country, *Marſyas* inuented the double
E fluit. But *Amphion* taught firſt to ſing and play to the Lydian meaſures: *Thamyras* the Thracian
to the Dorian:and *Marſyas* of Phrygia to the Phrygian. *Amphion* likewiſe (or,as ſome ſay, *Or-
pheus*,and after others *Linus*) plaied firſt vpon the Citterne or the Lute. *Terpander* put ſeuen
ſtrings more vnto it: *Simonides* added thereto an eight:and *Timotheus* the ninth. *Thamiras* was
the firſt that plaied vpon the ſtringed inſtrument, Lute Cittern,or harpe, without ſong:& *Am-
phion* ſung withal,or according to ſome, *Linus*. *Terpander* was the firſt that ſet ſongs for the fore-
ſaid ſtringed inſtrument. And *Dardanus* the Troezenian began firſt vocall muſicke to the pipe.
The Curets taught to daunce in armour; and *Pyrrhus* the Morisk,in order of battell: and both
theſe were taken vp firſt in Crete. The heroick or hexametre verſe we acknowledge to haue
come firſt from the Oracle of *Pythius Apollo*. But about the original of Poemes & Poetry,there
F is a great queſtion among authors. And it is probably gathered by hiſtories,that there were Po-
ets before the time of ths Trojane war. *Pherecides* of Syros,in the daies of king *Cyrus*, inuented
firſt the writing,in proſe. *Cadmus* the Mileſian wrote Chronicles,and compiled the firſt hiſtory;
Lycaon hath the report of ſetting out the firſt publicke games,and prouing of maſteries & feats
of ſtrength of actiuity,in Arcadia. To *Acoſtus* in Iolcum we are beholden for the firſt ſolem-
nities and games at funerals; and after him to *Theſeus*, in the ſtreights of Iſthmus. *Hercules*
inſtituted

instituted the exercise of wrestlers and champions at Olympia: and *Pythus* was the first plaier at tennise. *Gyges* the Lydian gaue the first proose of painting and limning, in Ægypt: but in Greece, *Euchir* a cousin of *Dædalus* was the first painter, as *Aristotle* supposeth; but after *Theophrastus*, it was *Polygnotus* the Athenian. *Danaus* was the first that sailed with a ship, and so he passed the seas from Egypt to Greece; for before that time they vsed but troughs or flat planks, deuised by K. *Erythra* to crosse from one Island to another in the red sea. But we meet with some writers who affirme, that the Troians and Mysians were the first sailers, and deuised nauigation before them in Hellespont, when they set out a voiage against the Thracians. And euen at this day in the British ocean, there be made certaine wicker boats of twigs couered with lether and stitched round about: in Nilus, of paper, cane-reed and rushes. *Philostephanus* witnesseth, that *Iason* first vsed the long ship or gally: but *Egesias* saith, that it was *Paralus*: *Ctesias* attributes it to *Samyras*; *Saphanas* to *Semyramis*: and *Archimachus*, to *Ægeon*. *Damastes* testifieth, that the Erythræans made the Bireme or gally with two banks of oares. *Thucydides* writeth that *Aminocles* the Corinthian built the first Trireme with three rows of oars to a side. *Aristotle* saith, that the Carthaginians were the first that set to sea the Quadrireme with 4 ranks of oares to a side: and *Nesichthon* the Salaminian, set aflote the first Quinquereme with 5 course of oares on either side. *Zenagoras* of Syracusa brought vp those of six; and so from it to those of ten, *Mnesigeton* was the inuenter. It is said, that *Alexander* the Great built gallies for 12 bankes to a side: and *Philostephanus* reporteth, that *Ptolemæ* syrnamed *Soter*, rose to fifteen: *Demetrius* the son of *Antigonus*, to thirty; *Ptolomæ Philadelphus*, to forty: and *Ptolomæ Philopator* syrnamed *Tryphon*, to fifty. As for ships of burthen and merchandise, as hoyes, &c. *Hippus Tyrius* inuented them. The Cyrenians made fregates; the Phœnicians, the bark; the Rhodians, the Pinace and Brigantine: and last of all the Cyprians made the hulke and great carrack. The Phœnicians were the first that in sailing, obserued the course of the stars. The Copeans deuised the oare: the Plateans inuented the broad and flat end thereof: *Icarus* the sailes: *Dædalus* the mast and the crosse saile-yard. The vessels for transporting of horses, were the inuention of the Samians, or else of *Pericles* the Athenien. The Thasij had the honour for framing the long ships couered with hatch: for before-time they fought only from out of the hin-decke in the poupe, and the fore-castle in the proe. Then came *Piseus* the Tyrrhene, and armed the stem and beake-head of the shippe with sharpe tines and pikes of brasse: *Eupalamus* deuised the anchor: *Anacharsis* made it first with two teeth or floukes: the grapling hookes and the yron hands were the deuise of *Pericles* the Athenien, and finally, *Typhis* inuented the help of the helme, for the Pylot to steere & rule the ship. The first that set out an Armada to the sea for fight was *Minos*. The first that killed beasts was *Hyperbius* the son of *Mars*: and *Prometheus* ventured to slay an oxe or a Bœuse.

Chap. LVII.

¶ *Wherein appeared first the generall agreement of all Nations.*

The secret consent of all countries was shewed first in this, That they should vniuersally in all places vse the Ionian letters.

Chap. LVIII.

¶ *Of Antique Letters.*

The old characters of Greeke letters, were the same in manner that the Latine be in these daies: and this appeareth sufficiently by an antique table of brasse which came from the temple at Delphos, the which at this day is in the great library of the Palatium dedicated to *Minerua*, by the liberality of the Emperors, with this or such like inscription vpon it, Ναυσικράτης πυθοῦνικος τὸν ἑαυτοῦ ἀνέθηκε τῇ Ἀθηνᾷ. *Nausicrates* (the son) of *Timamenus* an Athenien, caused this table to be made and set vp to the noble virgin *Minerua*.

Chap. LIX.

¶ *When Barbers were first seene at Rome.*

The next thing that all people of the world agreed in, was to entertain Barbers, but it was late first ere they were in any request at Rome. The first that entered Italy came out of Sicilie, and it was in the 454 yeare after the foundation of Rome. Brought in they were by

by *P. Ticinius Mena*, as *Varro* doth report; for before-time they neuer cut their haire. The first that was shauen euery day was *Scipio Africanus*; and after him commeth *Augustus* the Emperor, who euermore vsed the rasor.

Chap. LX.

¶ *Of Horologies or Dials, when they were first deuised.*

The third vniuersal accord of all nations, was in the obseruation how the houres went; and this was a point grounded vpon good reason: but at what time, and by whom this was deuised in Greece, we haue declared in the second booke of this work; & long it was before this order came vp at Rome, as well as the vse of the Barber. In the 12 tables of Romane lawes, there is no mention at all made but of East and West; after certain yeres the noon-stead point in the South quarter also was obserued, and the Consuls bedle or crier pronounced noon, when standing at the hall or chamber of the councell, he beheld the Sun in that wise betweene the pulpit called Rostra, and the Grecostasis [which was a place where forrein embassadours gaue their attendance:] but when that the same sun inclined downeward from the columne named Mœnia, to the common gaole or prison, then he gaue warning of the last quarter of the day, and so pronounced. But this obseruation would serue but vpon cleere daies, when the sun shined: and yet there was no other means to know how the day went, vntill the first Punicke war. *Fabius Vestalis* writeth, that *L. Papyrius Cursor*, 12 yeres before the war with *Pyrrhus*, was the first, that for to do the Romans a pleasure, set vp a sun-dyall to know what it was a clocke, vpon the temple of *Quirinus* at the dedication thereof, when his father had vowed it before him. Howbeit mine aurhor sheweth not either the reason of the making of that diall, or the workman; ne yet from whence it was brought, nor in what writer he found it so written. *M. Varro* reporteth, that the first diall was set vp in the common market place, vpon a columne neere the foresaid Rostra, in the time of the first Punicke war, by *M. Valerius Messala* the Consull, presently after the taking of Catana in Sicily; from whence it was brought; thirty yeares after the report that goeth of the foresaid quadrant and diall of *Papyrius*; namely, in the yeare after the foundation of the city 477. And albeit the strokes and lines of this Horologe or diall agreed not fit with the houres, yet were the people ruled and went by it for an hundred yeares saue one, euen vntill *Q. Martius Philippus* (who together with *L. Paulus* was Censor) set another by it, framed & made more exquisitly according to Art. And this piece of work among other good acts done by the Censor during his office, was highly accepted of the people as a singular gift of his. Yet for all this, if it were a close and cloudy day wherein the Sun shone not out, men knew not what it was a clocke certainly; and thus it continued fiue yeres more. Then at last, *Scipio Nasica* being Censor with *Lænas*, made the deuise first to diuide the houres both of day and night equally, by water, distilling and dropping out one vessell into another. And this manner of Horologe or water-clocke, he dedicated in the end within house, and that was in the 595 yere from the building of Rome. Thus you see how long it was, that the people of Rome could not certainly tell how the day passed. Thus much concerning the Nature of man: let vs returne now to discourse of other liuing creatures; and first of land-beasts.

THE

THE EIGHTH BOOKE OF THE HISTORIE OF NATVRE, WRITTEN BY C. PLINIVS SECVNDVS.

CHAP. I.

¶ *Of land beasts. The praise of Elephants: their wit and vnderstanding.*

PAsse we now to treat of other liuing creatures, and first of land-beasts: among which, the Elephant is the greatest, and commeth neerest in wit and capacitie, to men; for they vnderstand the language of that country wherin they are bred, they do what soeuer they are commanded, they remember what duties they be taught, and withall take a pleasure and delight both in loue and also in glory, nay more than all this, they embrace goodnesse, honestie, prudence, and equitie (rare qualities I may tel you to be found in men) and withal haue in religious reuerence (with a kinde of deuotion) not only the stars and planets, but the sun and moon they also worship. And in very truth, writers there be who report thus much of them, That when the new moon beginneth to appeare fresh and bright, they come downe by whole heards to a certaine riuer named Amelus, in the desarts and forests of Mauritania, where after that they are washed and solemnly purified by sprinckling and dashing themselues all ouer with the water, & haue saluted and adored after their manner that planet, they returne again into the woods & chases, carrying before them their yong calues that be wearied and tired. Moreouer, they are thought to haue a sense and vnderstanding of religion & conscience in others; for when they are to passe the seas into another country, they wil not embarke before they be induced thereto by an oath of their gouernors and rulers, That they shall returne again: and seene there haue bin diuers of them, being enfeebled by sickneſſe (for as big and huge as they be, subject they are to grieuous maladies) to lie vpon their backs, casting and flinging herbes vp toward heauen, as if they had procured and set the earth to pray for them. Now for their docility and aptnesse to learne any thing; the king they adore, they kneele before him, and offer vnto him garlands and chaplets of floures and green herbes. To conclude, the lesser sort of them, which they call Bastards, serue the Indians in good stead to eare and plough their ground.

CHAP. II.

¶ *When Elephants were put to draw first.*

THe first time that euer they were knowne to draw at Rome, was in the triumph of *Pompey* the Great, after he had subdued Africke, for then were two of them put in geeres to his triumphant chariot. But long before that, it is said that Father *Bacchus* hauing conquered India, did the like when he triumphed for his conquest. Howbeit, in that triumph of *Pompey*, *Procilius* affirmeth, That coupled, as they were, two in one yoke, they could not possibly go in at the gates of Rome, In the late solemnity of tournois & sword-fight at the sharp, which *Germanicus Cæsar* exhibited to gratifie the people, the elephants were seen to shew pastime with leaping & keeping a stir, as if they danced, after a rude and disorderly manner. A common thing it was

was among them to fling weapons & darts in the aire so strongly, that the winds had no power against them; to flourish also before hand; yea, and to encounter and meet together in fight like sword-fencers; and to make good sport in a kinde of Moriske dance: and afterwards to go on ropes and cords: to carry (foure together) one of them laid at ease in a litter, resembling the maner of women newly brought a bed: last of all, some of them were so nimble and well practised, that they would enter into an hall or dining place where the tables were set full of guests, and passe among them so gently and daintily, weighing as it were their feet in their going, so as they would not hurt or touch any of the company as they were drinking.

CHAP. III.

¶ *The docilitie of Elephants.*

THis is knowne for certaine, that vpon a time there was an Elephant among the rest, not so good of capacity, to take out his lessons, and learn that which was taught him: and being beaten and beaten again for that blockish and dull head of his, was found studying and conning those feats in the night, which he had bin learning in the day time. But one of the greatest wonders of them was this, that they could mount vp and clime against a rope; but more wonderfull, that they should slide downe again with their heads downward. *Mutianus*, a man who had in his time bin thrice Consull, reporteth thus much of one of them, that he had learned to make the Greeke characters, and was wont to write in that language thus much, *Thus haue I written, and made an offering of the Celticke spoiles.* Likewise hee saith, that himselfe saw at Puteoli, a certain ship discharged of Elephants embarked therein; and when they should be set ashore, and forced to go forth of the vessel, to which purpose there was a bridge made for them to passe ouer, they were affrighted at the length thereof, bearing out so far from the land into the water: and therefore to deceiue themselues, that the way might not seeme so long, went backward with their tails to the banke, and their heads toward the sea. They are ware, & know full well that their only riches (for loue of which, men lay wait for them) lieth in their armes and weapons that Nature hath giuen them: king *Iuba* calleth them their hornes: but *Herodotus*, who wrote long before him, and the custome of speech, hath tearmed them much better, teeth. And therefore when they are shed and fallen off, either for age, or by some casualtie, the Elephants themselues hide them within the ground. And this in truth is the only yuory: for all the rest, yea, and these teeth also so far as lay couered within the flesh, is of no price, and taken for no better than bone. And yet of late daies, for great scarcitie & want of the right teeth, men haue bin glad to cut and saw their bones into plates, and make yvorie therof. For hardly can we now come by teeth of any bignes, vnlesse we haue them out of India. For all the rest that might be gotten in this part of the world between vs and them, hath bin imploied in superfluities only, and serued for wanton toies. You may know yong Elephants by the whitenes of these teeth: and a speciall care and regard haue these beasts of them aboue all. They looke to one of them alwaies, that the point be sharp; and therefore they forbeare to occupie it, least it should bee blunt against they come to fight: the other they vse ordinarily, either to get vp roots out of the earth, or to cast down any banks or mures that stand in their way. When they chance to be enuironed and compassed round about with hunters, they set formost in the rank to be seen, those of the heard that haue the least teeth: to the end, that their price might not be thought worth the hazard and venture in chase for them. But afterwards, when they see the hunters eager, and themselues ouermatched and weary, they breake them with running against the hard trees, and leauing them behind, escape by this ransome as it were, out of their hands.

CHAP. IIII.

¶ *The clemencie of Elephants: their foresight and knowledge of their owne dangers: also of the fell fiercenesse of the Tygre.*

A Wonder it is in many of these creatures, that they should thus know wherefore they are hunted, and withall take heed & beware of all their dangers. It is said, that if an elephant chance to meet with a man wandering simply out of his way in the wildernesse, hee will mildly and gently set him in the right way again. But if he perceiue a mans fresh footing, before he espie the man, he will quake and tremble for feare of being forelaid & surprised: he wil

ſtay from farther following the ſent, look about him euery way, ſnuffe and puffe for very anger. G
Neither will he tread vpon the tract of a mans foot, but dig it out of the earth, and giue it the
next Elephant vnto him, and he againe to him that followeth, and ſo from one to another paſ-
ſeth this intelligence and meſſage as it were, to the vtmoſt rank behind. Then the whole heard
makes a ſtand, and caſt round about to returne backward, and withall put themſelues in battel
array: ſo long continueth that ſtrong virulent ſmel of mens feet, and runneth through them all,
notwithſtanding for the moſt part they be not bare but ſhod. Semblably, the Tigreſſe alſo, how
fierce and cruell ſhe be to other wilde beaſts, & careth not a whit for a very Elephant; if ſhee
happen to haue a ſight of a mans footing, preſently, by report, carieth away her young whelpes,
and is gon. But how commeth ſhe to this knowledge of a man? where ſaw ſhe him euer before, H
whom thus ſhe feareth? for ſurely ſuch wild woods & foreſts are not much trauelled & frequen-
ted by men. Set caſe, that they may wel wonder at the ſtrange ſight and nouelty of their tracts,
which are ſo ſeldome ſeen, how know they that they are to be feared? Nay, what ſhould be the
reaſon, that they dread to ſee a man indeed, being as they are, far bigger, much ſtronger, and
ſwifter by many degrees than a man? Certes, herein is to be ſeen the wonderfull worke of Na-
ture, and her mightie power; that the greateſt, the moſt fell and ſauage beaſts that be, hauing
neuer ſeen that which they ought to feare, ſhould incontinently haue the ſence and conceit,
why the ſame is to be feared.

Chap. V.

¶ *The vnderſtanding and memorie of Elephants.*

THe Elephants march alwaies in troups. The eldeſt of them leadeth the vaward, like a cap-
taine: and the next to him in age, commeth behind with the conduct of the arreareguard.
When they are to paſſe ouer any riuer, they put formoſt the leaſt of al their company, for I
feare, that if the bigger ſhould enter firſt, they would, as they trod in the channell, make the wa-
ter to ſwell and riſe, and ſo cauſe the fourd to be more deepe. *Antipater* writeth, that K. *Antio-*
chus had two Elephants, which he vſed in his wars aboue all the reſt, and famous they were for
their ſurnames, which they knew well enough, and wiſt when any man called them thereby: and
verily, *Cato* reciting in his Annals the names of the principall captaine Elephants, hath left in
writing, That the Elephant which fought moſt luſtily in the point of the Punick war, had to K
name Surus, by the ſame token, that the one of his teeth was gone. When *Antiochus* on a time
would haue ſounded the fourd of a certaine riuer, by putting the Elephants before, Ajax refu-
ſed to take the water, who otherwiſe at all times was wont to lead the way. Whereupon the king
pronounced with a loud voice, That look which Elephant paſſed to the other ſide, he ſhould be
the captain and chiefe. Then Patroclus gaue the venture: & for his labor had a rich harniſh and
capariſon giuen him, & was all trapped in ſiluer (a thing wherin they take moſt delight) and
made beſides the foueraigne of all the reſt. But the other that was diſgraced thus, and had loſt
his place, would neuer eat any meat after, but died for very ſhame of ſuch a reprochfull igno-
miny. For among other qualities, maruellous baſhfull they are: for if one of them be ouermat-
ched & vanquiſhed in fight, he wil neuer after abide the voice & braying of the conqueror, but L
in token of ſubmiſſion, giueth him a turfe of earth, with veruaine or graſſe vpon it. Vpon a kind
of ſhamefaced modeſty, they neuer are ſeen to ingender together, but perform that act in ſome
couert & ſecret corner. They go to rut, the male at 5 yeres of age, the femal not before ſhe is 10
yeres old. And this they do euery third yere: and they continue therein fiue daies in the yeare
(as they ſay) and not aboue: for vpon the ſixt day they all to waſh themſelues ouer in the run-
ning riuer: & before they be thus purified, return not to the heard. After they haue taken one to
another once, they neuer change: neither fall they out and fight about their ſemalls, as other
creatures do moſt deadly and mortally. And this is not for want of loue and hot affection that
way: for reported it is of one Elephant, that he caſt a fancy and was enamoured vpon a wench M
in Ægypt that ſold noſegaies & garlands of floures. And leſt any man ſhould thinke that hee
had no reaſon thereto, it was no ordinary maiden, but ſo amiable, as that *Ariſtophanes* the ex-
cellent Grammarian, was wonderfully in loue with her. Another there was, ſo kind and full of
loue, that he fanſied a youth in the army of *Ptolomæus*, that ſcarce had neuer an haire vpon his
face, and ſo entirely he loued him, that what day ſoeuer he ſaw him not, he would forbeare his
meat

A meat, and eat nothing. K. *Iuba* likewiſe reporteth alſo of an Elephant that made court to ano-
ther woman, who made and ſold ſweet ointments and perfumes. All theſe teſtified their loue
and kindnes, by theſe tokens: joy they would at the ſight of them, and looke pleaſantly vpon
them: make toward them they would (after their rude and homely manner) by all means of flat-
terie: and eſpecially in this, that they would ſaue whatſoeuer people caſt to them for to eat, and
lay the ſame ful kindly in their laps and boſomes. But no maruel it is that they ſhould loue
who are ſo good of memorie. For the ſame *Iuba* ſaith, That an Elephant tooke knowledge and
acquaintance of one man in his old age, and after many a yere, who in his youth had bin his ru-
ler and gouernor. He affirmeth alſo, that they haue by a ſecret diuine inſtinct, a certain ſence of
juſtice and righteous dealing. For when K. *Bacchus* meant to be reuenged of 30 Elephants, that
B he had cauſed to be bound vnto ſtakes, and ſet other 30 to run vpon them, appointing alſo cer-
tain men among to pricke and prouoke them thereto, yet for all that, could not one of them be
brought for to execute this butcherie, nor be miniſters of anothers crueltie.

Chap. VI.

¶ *When Elephants were firſt ſeen in Italy.*

THe firſt time that Elephants were ſeen in Italy, was during the war of K. *Pyrrhus*, & they
called them by the name of *Lucæ boues*, i. Lucane oxen, becauſe they had the firſt ſight of
them in the Lucans countrie, and it was in the 472 yere after the cities foundation. But in
Rome it was ſeuen yeres after ere they were ſeen, and then they were ſhewed in a triumph. But
C in the yere 502, a number of them were ſeen at Rome by occaſion of the victorie of *L. Metellus*
Pontifex ouer the Carthaginians: which Elephants were taken in Sicilie. For 142 of them were
conueied ouer vpon planks and flat bottomes, which were laied vpon ranks of great tuns and
pipes ſet thicke one by another. *Verrius* ſaith, that they were cauſed to fight in the great cirque
or ſhew place, and were killed there with ſhot of darts and iauelins for want of better counſel,
and becauſe they knew not well what to do with them: for neither were they willing to haue
them kept and nouriſhed, ne yet to be beſtowed vpon any kings. *L. Piſo* ſaith they were brought
out only into the ſhew place or cirque aforeſaid, and for to make them more contemptible
were chaſed round about it by certaine fellowes hired thereto, hauing for that purpoſe certain
D ſtaues and perches, not pointed with iron, but headed with bals like foiles. But what became of
them afterward, thoſe Authours make no mention: who were of opinion that they were not
killed.

Chap. VII.

¶ *Their fights and combats.*

MVch renowned is the fight of one Roman with an Elephant, at what time as *Annibal* for-
ced thoſe captiues whom he had taken of our men, to skirmiſh one againſt another, to
the vttrance. For the only Roman that remained vnſlaine at that vn naturall conflict, he
E would needs match with an Elephant, and ſee the combate himſelfe, aſſuring him vpon his
word, that if he could kil the beaſt, he ſhould be diſmiſſed and ſent home with life & liberty.
So this priſoner entred into ſingle fight with the Elephant, & to the great hearts griefe of the
Carthaginians ſlew him out-right. *Anniball* then ſent him away indeed according to promiſe
and couenant; but conſidering better the conſequence of this matter; and namely, that if this
combat were once by him bruted abroad, the beaſts would be leſſe regarded, and their ſeruice
in the wars not eſteemed; made after him certaine light horſemen to ouertake him vpon the
way to cut his throat, ſo making him ſure for telling tales. Their long ſnout or trunke which
the Latins call *Proboſcis*, may be eaſily cut off, as it appeared by experience in the wars againſt
K. *Pyrrhus*. *Feneſtella* writeth, That the firſt ſight of them in Rome, was exhibited in the grand
F Cirque, during the time that *Claudius Pulcher* was Ædile Curule, when *M. Antonius* and *A. Poſt-*
humius were Conſuls: in the 650 yere after the citie of Rome was built. In like maner, 20 yeres
after, when the *Luculli* were Ædiles Curule, there was repreſented a combat between bulls and
Elephants. Alſo in the ſecond Conſulſhip of *C. Pompeius* at the dedication of the temple to *Ve-*
nus Victorieſſe, 20 of them, or as ſome write 17 fought in the great Cirque. In which ſolemnitie

the Gætulians were set to launce darts and jauelins against them. But among all the rest, one Elephant did wonders: for when his legs and feet were shot and stucke full of darts, he crept vp- on his knees, and neuer staied til he was gotten among the companies of the said Gætulians, where he caught from them their targets and bucklers perforce, flung them aloft into the aire, which as they fell, turned round, as if they had bin trundled by art, & not hurled & thrown with violence by the beasts in their furious anger: and this made a goodly sight, and did great plea- sure to the beholders. And as strange a thing as that was seen in another of them, whose fortune was to be killed out of hand with one shot: for the dart was so driuen, that it entered vnder the eie, and pierced as far as to the vitall parts of the head, euen the ventricles of the brain. Wher- upon all the rest at once assaied to break forth and get away, not without a great hurry & trou- ble among the people, notwithstanding they were without the lists, and those set round about with yron grates and bars. [And for this cause *Cæsar* the Dictatour, when afterwards hee was to exhibit the like shew before the people, cast a ditch round about the place, letting in the water and so made a mote thereof: which prince *Nero* afterwards stopped vp, for to make more room for the knights and men of armes.] But those Elephants of *Pompey* being past all hope of esca- ping and going cleere away, after a most pittifull manner and rufull plight that cannot bee ex- pressed, seemed to make mone vnto the multitude, craning mercie and pittie, with grieuous plaints and lamentations, bewailing their hard state and wofull case: in such sort, that the peo- ples hearts earned again at this piteous sight, and with tears in their eies, for very compassion, rose vp all at once from beholding this pageant, without regard of the person of *Pompey* that great Generall and Commander, without respect of his magnificence and stately shew, of his munificence and liberality, where he thought to haue woon great applause and honor at their hands; but in lieu thereof fell to cursing of him, and wishing all those plagues and misfortunes to light vpon his head, which soon after insued accordingly. Moreouer, *Cæsar* the Dictatour in his third Consulship exhibited another sight of them, and brought forth 20 to maintain skir- mish against 500 footmen: and a second time he set out 20 more, with woodden turrets vpon their backs, containing 60 defendants apiece: and he opposed against them 500 footmen, and as many horse. After all this, *Claudius* and *Nero* the Emperors brought them forth one by one into single fight, with approued, expert, and accomplished fencers, at the end of al the other so- lemnitie when they had done their prizes. This beast, by report of all writers, is so gentle to all others that are but weak, and not so strong as himselfe, that if he passe through a flock or heard of smaller cattell, it will with the nose or trunke which ferueth in stead of his hand, remoue and turn aside whatsoeuer beast commeth in his way, for feare he should go ouer them, and so crush and tread vnder his foot any of them, ere it were aware. And neuer do they any hurt, vnlesse they be prouoked thereto. Alwaies walke they by troups together, and worst of all other can they away with wandring alone, but loue company exceeding well. If it fortune that they be inuiro- ned with horsmen, look how many of their fellows be feeble, weary, or wounded, those they take into the mids of their squadron: and as if there were marshalled and ordered by a Serjeant of a band, or heard the direction of some Generall, so skilfully and as it were with guidance of reason, do they maintain fight by turns, and succeed one after another in their course. The wild sort of them, after they be taken, are sooneſt brought to be tame and gentle, with the iuice or decoction of husked barly.

G H I K L

Chap. VIII.

¶ *The manner of taking Elephants:*

THe Indians are wont to take Elephants in this manner: the gouernor driueth one of them that are tame, into the chase and forrests, and when he can meet with one of them alone, or single him from the heard, he all to beateth the wilde beast till he hath made him wearie, and then he mounteth vpon him & ruleth him as wel as the former. In Africk they catch them in great ditches which they make for that purpose: into which, if one of them chance to wan- der astray from his fellowes, all the rest immediatly come to succour him; they heap together a deale of boughs, they rol down blocks & stones, and what soeuer may serue to raise a banke, and with all that euer they can do, labor to pluck him out. Before-time, when they meant to make them tractable, their maner was, by a troup of horsmen to driue or train them by little & little a long

M

A a long way in a certain lawn or vally, made by mans hand for the nones, ere they were aware, and when they were inclosed within ditches or bankes, there they would keep them from meat so long, vntil for very hunger they would be glad to come to hand for food: & by this they might know, they were gentle and tame enough to be taken, if they would meekly take a branch of a bow presented and offred vnto them. But now adaies, since they seek after them for their teeths sake, they make no more ado but shoot at their legges, which otherwise naturally are tender e- nough and the softest part of their whole body. The Troglodites, a people bounding vpon Æ- thiopia, who liue only vpon the venison of Elephants fleth, vse to clime trees that be neer their walk, and there take a stand: from thence (letting all the heard to passe quietly vnder the trees)
B they leap down vpon the buttocks of the hinmost: then he that doth this feat, with his left hand laieth fast hold vpon his taile, and sets his feet and legs fast in the flanke of the left side, and so hanging and bending backward with his body, he cutteth the ham-strings of one of his legges with a good keen bil or hatchet that he hath of purpose in his right hand: which done, the Ele- phant beginneth to slack his pace, by reason that one of his legs is wounded: the man then ma- keth shift to get away and alighteth on foot, and for a farwell he hougheth the sinews likewise of the other ham; and all this doth he in a trice with wonderful agility and nimblenes. Others haue a safer way than this, but it is more subtill and deceitfull: they set or stick in the ground a great way off, mighty great bows ready bent; to hold these fast, they chuse certain tal lusty, and strong fellows, and as many others as sufficient as they, to draw with all their might and maine
C the said bowes against the other, and so they let flie against the poore Elephants as they passe by, jauelins and bore-spears, as if they shot shafts, and stick them therwith, and so follow them by their bloud. Of these beasts, the femals are much more fearfull than the male kind.

Chap. IX.

¶ *The manner of taming Elephants.*

AS furious and raging mad as they be sometime, they are tamed with hunger and stripes: but men had need to haue the help of other Elephants that are tame already, to restraine the vnruly beast with strong chains: of all times, when they go to rut they are most out of
D order and starke wood, down go the Indian stables and beast stals then, which they ouer-turne with their teeth; and therfore they keepe them from entring into that fit, and separate the fe- mals apart from the males, making their parks and enclosures asunder, as they doe by other beasts. The tamed sort of them serue in the wars, and carry little castles or turrets with armed souldiers, to enter the squadrons and battalions of the enemies: and for the most part, all the seruice in the wars of the East, is performed by them, and they especially determine the quar- rell: these be they that breake the ranks, beare down armed men that are in the way, and stampe them vnder foot. These terrible beasts (as outragious otherwise as they seem) are frighted with the least grunting that is of a swine: be they wounded at any time or put into a fright, backe- ward alwaies they go, and do as much mischiefe to their own side that way, as to their enemies.
E The African Elephants are afraid of the Indian, and dare not look vpon them; for in truth the Indian Elephants be far bigger.

Chap. X.

¶ *How they breed and bring forth their young: and of their nature otherwise.*

THe common sort of men thinke, that they go with young ten yeres: but *Aristotle* saith that they go but two yeares, and that they breed but once and no more in their life, and bring not aboue one at a time: also that they liue commonly by course of nature 200
F yeres, and some of them 300. Their youthful time and strength of age beginneth when they be 60 yeres old: they loue riuers aboue all things, and lightly ye shall haue them euermore wan- dring about waters; and yet by reason otherwise of their big and vnwealdie bodies, swim they cannot. Of all things they can worst away with cold, and that is it they are most subiect vnto, and feele greatest inconuenience by: troubled they be also with the collick, and ventosities, as also with the flux of the belly: other maladies they feele not. I find it written in histories, that if

they drinke oile, the arrows and darts which stick in their bodies wil come forth and fall off : G but the more that they sweat, the sooner wil they take hold and abide in stil the faster. The eating of earth breedes the consumption in them, vnlesse they feed and chew often thereof: they deuoure stones also. As for the trunks and bodies of trees, it is the best meat they haue, & therin take they most delight. If the date trees be too high that they cannot reach the fruit, they will ouerturn them with their forehead, and when they lie along, eat the dates. They chew and eat their meat with their mouth: but they breath, drink, and smell, with their trunke, which not improperly is called their hand. Of all other liuing creatures, they cannot abide a mouse or a rat, and if they perceiue that their prouander lying in the manger, tast and sent neuer so little of them, they refuse it and wil not touch it. They are mightily tormented with paine, if they chance in their drinking to swallow down an horsleech (which worm, I obserue, they begin now H to cal, a bloud-sucker:) for so soon as the horsleech hath setled fast in his wind-pipe, he putteth him to intollerable pains. Their hide or skin of their back is most tough & hard; but in the belly, soft & tender: couered their skin is neither with haire nor bristle, no not so much as in their taile, which might serue them in good stead to driue away the busie & troublesome flie (for as vast & huge a beast as he is, the flie hanteth & stingeth him) but ful their skin is of crosse wrinkles lattise wise; & besides that, the smell thereof is able to draw and allure such vermin to it: & therefore when they are laid stretched along, and perceiue the flies by whole swarms setled on their skin, suddenly they draw those cranies and creuises together close, and so crush them all to death. This serues them in stead of taile, main, and long haire. Their teeth beare a very high price, and they yeeld the matter of greatest requeſt, and most commendable, for to make the sta- I tues and images of the gods: but such is the superfluity and excesse of men, that they haue deuised another thing in them to commend; for they find forsooth a special dainty tast in the hard callous substance of that which they cal their hand: for no other reason (I beleeue) but because they haue a conceit that they eat yvorie, when they chew this gristle of their trunk. In temples are to be seen Elephants teeth of the greatest size: howbeit in the marches of Africke where it confineth vpon Æthiopia, they make of yuory the very principals and corner posts of their houses: also with the Elephants tooth they make mounds & pales both to incloſe their grounds, and also to keep in their beasts within park, if it be true that *Polybius* reporteth, from the testimony of king *Gulussa*. K

Chap. XI.

¶ *Where the Elephants are bred : how the Dragons and they disagree.*

ELephants breed in that part of Africke which lieth beyond the desarts and wilderneſſe of the Syrtes : also in Mauritania: they are found also amongst the Æthyopians and Troglodites, as hath beene said : but India bringeth forth the biggest: as also the dragons that are continually at variance with them, & euermore fighting, and those of such greatneſſe, that they can easily clasp and wind round about the Elephants, and withall tye them fast with a knot. In this conflict they die, both the one and the other: the Elephant he fals downe dead as conque- L red, and with his heauy weight crusheth and squeaseth the dragon that is wound and wreathed about him.

Chap. XII.

¶ *The wittineſſe and policie in those creatures.*

WOnderfull is the wit and subtilty that dumbe creatures haue, and how they shift for themselues and annoy their enemies; which is the only difficulty that they haue to arise & grow to so great an heigth and exceſſiue bignes. The dragon therfore eſpying the Elephant when he goeth to reliefe, assaileth him from an high tree and launceth himselfe M vpon him; out the Elephant knowing well enough he is not able to withstand his windings & knittings about him, seeketh to come close to some trees or hard rocks, and so for to crush and squise the dragon between him and them: the dragons ware hereof, entangle and snarle his feet & legs first with their taile: the Elephants on the other side, vndo those knots with their trunk as with a hand: but to preuent that againe, the Dragons put in their heads into their snout, and so

A so stop their wind, and withall fret and gnaw the tenderest parts they find there. Now in case these two mortall enemies chance to re-incounter on the way, they bristle & bridle one against another, and addresse themselues to fight ; but the chiefe thing the dragons make at is the eie, whereby it comes to passe, that many times the Elephants are found blinde, pined for hunger, and worne away, and after much languishing, for very anguish and sorrow die of their venome. What reason should a man alledge of this so mortall warre betweene them, if it be not a very sport of Nature, and pleasure that she takes, in matching these two so great enemies together, and so euen and equall in each respect ? But some report this mutuall war between them after another sort, and that the occasion thereof ariseth from a naturall cause : for (say they) the Ele- B phants bloud is exceeding cold, and therefore the dragons be wonderful desirous thereof to refresh and coole themselues therewith during the parching hot season of the yeare. And to this purpose they ly vnder the water, waiting their time to take the Elephants at a vantage when they are drinking ; where they catch fast hold first of their trunke, and they haue not so soone clasped and intangled it with their taile, but they set their venomous teeth in the Elephants eare (the onely part of all their body which they cannot reach vnto with their trunke) and so bite it hard : now these dragons are so big withal, that they are able to receiue all the elephants bloud : thus are they sucked dry vntill they fall down dead : and the dragons also, drunke with their bloud, are squeesed vnder them, and so dy together.

Chap. XIII.

C

¶ *Of Dragons.*

IN Æthyopia there be as great dragons bred as in India, namely 20 cubits long : but I maruell much at this one thing, that king *Iuba* should think they are crested. They are bred most in a countrey of Æthyopia where the Asachæi inhabit. It is reported, that vpon their coast they are inwrapped foure or fiue of them one within another, like to a hurdle or lattise-worke, and thus passe the seas to find out better pasturage in Arabia, cutting the waues, and bearing their heads aloft, which serue them in stead of sailes.

Chap. XIV.

D

¶ *Of monstrous great Serpents, and namely of those called Boæ.*

MEgasthes writeth, that there be serpents among the Indians growne to that bigneſſe, that they are able to swallow stags or bulls all whole. *Metrodorus* saith, that about the riuer Rhyndacus in Pontus, there be serpents that catch and deuoure the fowles of the aire, be they neuer so swift winged, and soare they neuer so high. Well knowne it is, that *Attilius Regulus*, Generall vnder the Romans during the wars against the Carthaginians, assailed a Serpent neere the riuer Bagrada, which caried in length 120 foot ; and before hee could conquer him was driuen to discharge vpon him arrowes, quarrels, stones, bullets, and such like shot, out of brakes, slings, and other engins of artillery, as if he had giuen the assault to some strong warlike towne : the proofe whereof was to be seen by the marks remaining in his skin and chawes, E which vntill the war of Numantia remained in a temple or conspicuous place of Rome. And this is the more credible, for that we see in Italy other serpents named Boæ, so big and huge, that in the daies of the Emperor *Claudius* there was one of them killed in the Vaticane, within the belly whereof there was found an infant all whole. This serpent liueth at the first of kines milk, and then of takes the name Boæ. As for other beasts which ordinarily of late are brought from all parts into Italy, and oftentimes haue there been seen, needlesse it is for me to describe their formes in particular curiously.

Chap. XV.

F

¶ *Of Scythian beasts, and those which are bred in the North parts.*

VEry few sauage beasts are ingendred in Scythia for want of trees & pasturage. Few likewise in Germany bordering vpon it. Howbeit that country brings forth certaine kindes of goodly great wild bœufs: to wit, the Bisontes, mained with a collar like Lions: and the

Vri,

Vri, a mighty strong beast and a swift, which the ignorant people call Buffles, whereas indeed G
the Buffle is bred in Africke, and somewhat resembles a calfe rather, or stag. The Northerne
regions bring forth wilde horses, which there are found in great troups: like as in Asia and
Africk there are to be seen wild Asses. Moreouer, a certain beast called the Alce, very like to a
horse, but that his eares are longer, and his necke also with two markes distinguishing them a-
like the Alce aboue-named: common he is there, & much talk we haue heard of him, howbeit
in these parts he was neuer seen. He resembles, I say, the Alce, but that he hath neither ioynt in
the hough, nor pasternes in his hind legs; and therefore he neuer lieth downe, but sleepeth lea-
ning to a tree. Wherefore the hunters that lie in wait for these beasts, cut down the trees while H
they are asleepe, and so take them: otherwise they should neuer be taken, they are so swift of
foot, that it is wonderfull. Their vpper lip is exceeding great, and therefore as they grase and
feed they go retrograde, left if they went passant forward, they should fold that lip double vn-
der their muzzle. There is (they say) a wild beast in Pæonia, called Bonasus, with a maine like
an horse, otherwise resembling a bull: mary his hornes bend so inward with their tips toward
his head, that they serue him in no stead at all for fight, either to offend, or defend himself: and
therefore all the helpe hee hath is in his good footmanship, and otherwhiles in his flight by
dunging, which he will squirt out from behind him three acres in length. This his ordure is so
strong and hot, that it burneth them that pursue him, like fire, if haply they touch it. A strange
thing it is, and wonderfull, that the Leopards, Panthers, Lions, and such like beasts, as they go, I
draw in the points of their claws within their body, as it were into sheaths, because they should
neither breake nor wax blunt, but be alwaies keene and sharpe: also, that when they runne they
should turne the hooked nailes of their pawes back, and neuer stretch them forth at length but
when they meane to assaile or strike any thing.

Chap. XVI.

¶ *Of Lions.*

THe Lions are then in their kind most strong and couragious, when the haire of their main
or collar is so long that it couereth both necke and shoulders. And this comes to them
at a certain age, namely to those that are ingendred by Lions: for such as haue Pards to K
their sires neuer haue this ornament, no more than the Lioneſſe. These Lioneſſes are very le-
cherous, aad this is the cause that the Lions are so fell and cruell. This, Africke knowes best,
and sees most; and especially in a great drought, when for want of water a great number of
wild beasts resort by troups to those few riuers that be there, and meet together: and hereupon
it is, that so many strange shaped beasts of a mixt and mungrell kind are there bred, whiles the
males either perforce or for pleasure leap and couer the females of all sorts. From hence it is
also that the Greeks haue this common prouerbe, *That Africke euermore brings forth some new and
strange thing or other.* The Lion knoweth by sent and smell of the Pard, when the Lioneſſe his
mate hath played false, and suffered her selfe to be couered by him; and presently with all his
might and maine runneth vpon her for to chastise and punish her. And therefore when the Li- L
oneſſe hath done a fault that way, she either goeth to a riuer and washeth away the strong and
ranke sauor of the Pard, or else keepeth aloofe and followeth the Lion afar off, that he may not
catch the said smell. I see it is commonly held, that the Lioneſſe brings forth yong but once
in her life, for that her whelps in her kinling teare her belly with their nailes, and make them-
selues roome that way. *Aristotle* writeth otherwise, a man whom I cannot name but with great
honour and reuerence, and whom in the historie and report of these matters I meane for the
most part to follow. And in very truth King *Alexander* the Great, of an ardent desire that he
had to know the natures of all liuing creatures, gaue this charge to *Aristotle*, a man singularly
accomplished with all kinds of science and learning, to search into this matter, and to set down M
the same in writing: and to this effect commanded certaine thousands of men, one or other,
throughout all the tract as well of Asia as Greece, to giue their attendance and obey him: to
wit, all Hunters, Falconers, Fowlers, and Fishers that liued by those professions: Item, all For-
resters, Park-keepers, and Wariners: all such as had the keeping of heards and flockes of cat-
tell: of bee-hiues, fish-pooles, stewes, and ponds: as also those that kept vp fowle tame or wild,
in

A in mewe: those that fed poultry in barton or coup: to the end that he should be ignorant of no-
thing in this behalfe, but be aduertised by them, according to his Commission, of all things in
the world. By his conference with them he collected so much, as thereof hee compiled those
excellent bookes *de Animalibus, i.* of Liuing creatures, to the number almost of 50. Which be-
ing couched by me in a narrow roome and briefe summary, with addition also of some things
which he neuer knew, I beseech the Readers to take in good worth: and for the discouerie and
knowledge of all Natures works, which that most noble and famous King that euer was desired
so much to know, to make a short start abroad with me, and in a briefe discourse by mine own
pains and diligence digested, to see all. To return now vnto our former matter: That great phi-
B losopher *Aristotle* therefore reporteth, That the Lioneſſe at her first litter bringeth forth fiue
whelps, and euery yeare after fewer by one: and when she commeth to bring but one alone, she
giueth ouer and is barren. Her whelps at the first are without shape like small gobbets of flesh
no bigger than weesels. When they are six moneths old they can hardly go, and for the two
first they stirnot at all. Lions there be also in Europe (only between the riuers Achelous and
Nestus) and these verily be far stronger than those of Africke or Syria. Moreouer, there are
two kinds of Lions: the one short, wel trussed, and compact, with more crisp and curled mains,
but these are timerous and cowards to them that haue long and plain haire; for those passe not
for any wounds whatsoeuer. The Lions lift vp a leg when they pisse, as dogs do: and moreouer,
they haue a strong and stinking breath, their very body also smelleth rank. Seldom they drink,
C and eate but each other day; and if at any time they feed til they be full, they wil abstain from
meat three daies after. In their feeding, whatsoeuer they can swallow without chewing, downe
it goes whole: and if they finde their gorge and stomacke too full, and not able indeed to re-
ceiue according to their greedy appetite, they thrust their pawes down their throats, and with
their crooked clees fetch out some of it again, to the end they should not be heauy and slow
vpon their fulnesse, if haply they be put to find their feet and fly. Mine Author *Aristotle* saith
moreouer, That they liue very long: and hee proueth it by this argument, That many of them
are found toothlesse for very age. *Polybius*, who accompanied [*Scipio*] *Æmylianus* in his voiage
of Africke, reporteth of them, That when they be growne aged they will prey vpon a man: the
reason is, because their strength will not hold out to pursue in chase any other wild beasts: then
D they come about the cities and good towns of Africke, lying in wait for their prey, if any folk
come abroad: and for that cause, he saith, that while hee was with *Scipio*, hee saw some of them
crucified and hanged vp, to the end that vpon the sight of them other Lions should take exam-
ple, and be skarred from doing the like mischiefe. The Lion alone of all wilde beasts, is gentle
to those that humble themselues vnto him, and will not touch any such vpon their submission,
but spareth what creature soeuer lieth prostrate before him. As fell and furious as he is other-
whiles, yet he dischargeth his rage vpon men, before he sets vpon women, and neuer preyeth on
babes vnlesse it be for extreme hunger. They are verily perswaded in Lybia, that they haue a
certain vnderstanding when any man doth pray or intreat them for any thing. I haue heard it
reported for a truth, by a captiue woman of Getulia (which being fled was brought home again
E to her master) that she had pacified the violent fury of many Lions within the woods and for-
rests, by faire language and gentle speech; and namely, that for to escape their rage, shee hath
been so hardy as to say, she was a silly woman, a banished fugitiue, a sickly, feeble, & weak crea-
ture, an humble suiter and lowly suppliant to him the noblest of all other liuing creatures, the
Soueraigne and commander of all the rest, and that she was too base and vnworthy for his glo-
rious Maiestie to prey vpon her. Many and diuers opinions are currant, according to the sundry
occurrences that haue hapned, or the inuentions that mens wits haue deuised as touching this
matter; namely, that sauage beasts are dulced and appeased by good words and faire speech: as
also that fell serpents may be trained and fetched out of their holes by charmes; yea and by
certaine coniurations and menaces restrained and kept vnder for a punishment: but whether
F it be true or no, I see it is not yet by any man set downe or determined. To come againe to our
Lions, the signe of their intent and disposition is their taile; like as in horses, their eares: for
these two marks and tokens certainly hath Nature giuen to the most couragious beasts of all
others, to know their affections by: for when the Lion stirs not his taile, he is in a good mood,
gentle, mild, pleasantly disposed, and as if he were willing to be plaied withall: but in that fit
he is seldome seen, for lightly he is alwaies angry. At the first when he entreth into his choler,
he

he beateth the ground with his taile: when he groweth into greater heats, he flappeth and jerketh his flanks and sides withall, as it were to quicken himselfe, and stir vp his angry humour. His maine strength lieth in his brest: hee maketh not a wound (whether it be by lash of taile, scratch of claw, or prick of tooth) but the bloud that followeth is black. When his belly is full all his anger is past, and he doth no more harme. His generositie and magnanimitie he shewes most in his dangers: which courage of his appeareth not only herein, that he seems to despise all shot of darts against him, defending himselfe a long time onely with the terrible aspect of his countenance, protesting as it were that he is vnwilling to deale, vnlesse he be forced thereto in his owne defence, *i. se defendendo*, and at length maketh head again, not as compelled or driuen thereto for any perill that hee feeth, but angred at their folly that assaile or set vpon him: but herein also is seen rather his noble heart and courage, That be there neuer so many hounds and hunters following after him, so long as he is in the open plains where he may be seene, hee maketh semblance as though he contemned both dog and man, dismarching and retiring with honour, and otherwhiles seeming in his retreit to turne again and make head: but hauing gained the thickets and woods, and gotten into the forrests out of sight, then he skuds away, then he runneth amain for life, as knowing full well, that the trees and bushes hide him, that his shamefull dislodging and flight is not then espied. When hee chaseth and followeth after other beasts he goeth alwaies saltant or rampant; which he neuer vseth to do when he is chased in sight, but is only passant. If the chance to be wounded, he hath a maruellous eye to mark the party that did it, and be the hunters neuer so many in number, vpon him he runneth only. As for him that hath let fly a dart at him, and yet missed his marke and done no hurt to him, if he chance to catch him, he all to touzeth, shaketh, tosseth, and turneth him lying along at his feet, but doth him no harme besides. When the Lionesse fighteth for her yong whelps, by report, she setteth her eies wistly and entirely vpon the ground, because shee would not be affrighted at the sight of the chasing staues of the hunters. Lions are nothing at all crafty and fraudulent, neither be they suspitious: they neuer look askew, but alwaies cast their eye directly forward, and they loue not that any man should in that sort looke side-long vpon them. It is constantly beleeued, that when they ly a dying they bite the earth, & in their very death shed teares. This creature, so noble as hee is, and withall so cruell and fell, trembleth and quaketh to heare the noise of cart-wheeles, or to see them turne about; nay hee cannot abide of all things Chariots when they be void and empty: frighted hee is with the cockes combe, and his crowing much more, but most of all with the sight of fire. The Lion is neuer sicke but of the peeuishnesse of his stomacke, loathing all meat: and then the way to cure him is to ty vnto him certaine shee Apes, which with their wanton mocking and making mowes at him, may moue his patience, and driue him for the very indignitie of their malapert saucinesse, into a fit of madnesse; and then so soone as he hath tasted their bloud he is perfectly wel again: and this is the only help. *Q. Scæuola* the son of *Publius* was the first at Rome that in his Curule Ædileship exhibited a fight and combat of many Lions together, to delight the people: but *L. Sylla*, who was afterward Dictator, was the first of all others that in his Pretorship represented a shew of 100 lions with maines and collars of haire: and after him, *Pompey* the Great shewed 600 of them fighting in the grand Cirque, whereof 315 were male Lions with mane. And *Cæsar* Dictator brought 400 into the shew-place. The taking of them in old time was a very hard piece of worke, and that was commonly in pit-falls: but in the Emperor *Claudius* his daies it chanced, that a shepheard or heardsman who came out of Getulia taught the manner of catching them: a thing otherwise that would haue beene thought incredible, and altogether vnbeseeming the name and honour of so goodly a beast. This Getulian, I say, fortuned to incounter a Lion, and when he was violently assailed by him, made no more ado but threw his mandilion or cassocke full vpon his eyes. This feat or cast of his was soone after practised in the open Shew-place, in such sort that a man would hardly haue beleeued but hee that saw it, that so furious a beast should so easily be quailed, and daunted so soone as euer hee felt his head couered, were the things neuer so light; making no resistance, but suffering one to do what hee would with him, euen to binde him fast, as if in very truth all his vigour and spirit rested in his eies. Lesse therefore is it to be maruelled at, that *Lysimachus* strangled a Lion, when as by the commandement of *Alexander* the Great he was shut vp alone together with him. The first man that euer yoked them a Rome, and made them to draw in a chariot, was *M. Antonius*. And verily it was in the

the time of ciuill warre, after the battell fought in the plaines of Pharsalia; a shrewd and vnhappy presage of the future euent, and namely for men of an high spirit & braue mind in those daies, to whom this prodigious sight did prognosticate the yoke of subiection: for what should I say how *Anthony* rode in that wise with the Courtesan *Cytheris* a common Actresse in Interludes vpon the stage? To see such a sight was a monstrous spectacle, that passed all the calamities of that time. It is reported that *Hanno* (one of the noblest Carthaginians that euer were) was the first man that durst handle a Lion with his bare hand, and shew him gentle and tame, to follow him all the city ouer in a slippe like a dog. But this deuice and tricke of his turned to his great damage and vtter vndoing: for the Carthaginians hereupon laid this ground, that *Hanno*, a man of such a gift, so witty and inuentiue of all deuises, would be able to persuade the people to what soeuer his minde stood; and that it was a dangerous and tickliſh point, to put the liberty of so great a state as Carthage was, into the hands and managing of him who could handle and tame the furious violence of so sauage a beast, and thereupon condemned and banished him. Moreouer we find in histories many examples also of their elemencie and gentlenesse, seen vpon diuers casuall occasions. *Mentor* the Syracusian fortuned in Syria to meet with a Lion, who after an humble maner in token of obedience and submission, seemed to tumble and wallow before him: he astonied for feare started backe and began to fly; but the wild beast followed him still, and was ready at euery turne to present himselfe before him, licking the very tracks of his foot-steps as he went, in flattering manner, as if he would make loue vnto him. *Mentor* at length was ware that the Lion had a wound in his foot, and that it swelled therewith: whereupon he gently plucked out the spill of wood that had gotten into it, and so eased the beast of his paine. This accident is for a memoriall represented in a picture at Syracusa. Semblably, *Elpis* a Samian being arriued and landed in Africk, chanced to espy neer the shore a Lion gaping wide, and seeming afar off to whet his teeth at him in menacing wise: he fled apace to take a tree, calling vpon god *Bacchus* to help him (for then commonly wee fall to our praiers when we see little or no hope of other helpe:) but the Lion stopt him not in his flight, albeit he could haue crossed the way well enough, but laying himselfe downe at the tree root, with that open mouth of his wherewith he had skared the man, made signes to moue pitty and compassion. Now so it was, that the beast hauing lately fed greedily, had gotten a sharp bone within his teeth, that put him to exceeding paine: besides that, hee was almost famished: and he looking pittifully vp to the man, shewed how he was punished himselfe among those verie weapons wherewith he was wont to anoy others, and after a sort with dumb and mute prayers besought his help. *Elpis* aviſed him well a pretty while; and besides that hee was not very forward to venture vpon the wilde beast, he staied the longer and made the lesse hast, while he considered rather this strange and miraculous accident, than otherwise greatly feared. At last he comes downe from the tree and plucks out the bone, whiles the Lion held his mouth handsomly to him, and expoſed himselfe to his helpfull hand as fitly as he possibly could. In requitall of which good turne, it is said, that so long as this ship of his lay there at anchor, the Lion furnished him and his company with good store of venison ready killed to his hand. And vpon this occasion *Elpis* after his return dedicated a temple to *Bacchus*: which vpon this reason the Greeks called Κυνίσιτος Διονύσου, *i.* of gaping *Bacchus*: or Σωτῆρος τοῦ Διονύσου, *i.* the chappell of *Bacchus* the Sauiour. Can we maruell any more from henceforth, that wild beasts should marke and know the footing of a man, seeing that in their extremities and necessities they haue recourse to him alone for hope of succour? Why went not they to other creatures? or who taught them that the hand of man was able to cure them? vnlesse this be the reason, that griefe, anguish, and extreme perill forceth euen sauage beasts to seeke all means of help and reliefe.

Chap. XVII.

¶ *Of Panthers.*

Demetrius the philosopher, so wel seen into the speculation of Natures works, & the causes thereof, makes mention of as memorable a case as the former, touching a Panther: for as he saith there was a Panther desirous to meet with a man, & therefore lay in the midst of an high-way vntill some passenger should come by, and suddenly was espied by the father of

of *Philinus* the Philoſopher, who trauailed that way. The man (for feare) began to retire and go backe againe, but the wild beaſt kept a tumbling and vauting all about him; doubtleſſe and by all apparance after a flattering ſort, as if it would haue had ſomwhat; and ſuch a toſſing and tormenting of it ſelfe ſhe made, ſo piteouſly, that it might ſoone be ſeene in what griefe and pain the Panther was. The poore beaſt had but lately kindled, and her young whelps were ſalne into a ditch, a farre off: well, the firſt point that the man ſhewed of pitty and commiſeration was, not to be affraid; and the next was, to haue regard and care of her: follow he did the Panther, as ſhe ſeemed to train and draw him by his garment (which with her clawes ſhee tooke hold of daintily) vntill they were come to the pit or ditch aboue-ſaid. So ſoon then as he knew the cauſe of her griefe and ſorrow, and withall what might be the reward of his courteſie, euen as much as his life came to, he drew forth her little ones that were fallen into the ſaid pit: which don, ſhe and her whelps together leaping and ſhewing gambols for ioy, accompanied him, and through the wilderneſſe directed him vntill he was gotten forth. So as it appeared in her, that ſhee was thankfull vnto him, and requited his kindneſſe, albeit there paſſed no couenant nor promiſe between them of any ſuch recompence: a rare example to be found euen among men. This ſtory and ſuch like giue great colour of truth to that which *Democritus* reporteth, namely, that *Thoas* in Arcadia ſaued his life by means of a dragon. This *Thoas* being but a very childe, had loued this dragon when he was but yong, very well, and nouriſhed him: but at laſt, being ſomewhat fearfull of his nature, and not well knowing his qualities, and fearing withall the bignes that now he was growne vnto, had carried him into the mountains and deſarts: wherein it fortuned that he was afterward ſet vpon and inuironed by theeues: whereupon he cried out, and the dragon knowing his voice, came forth and reſcued him. As for babes and infants caſt forth to periſh, and ſuſtained by the milke of wilde beaſts, like as *Romulus* and *Remus* our firſt founders, who were ſuckled by a ſhe wolfe; ſuch things in mine opinion are in all reaſon to be attributed more to fortune and fatall deſtinies, than to the nature of thoſe beaſts. The Panthers and Tygers are in a maner the only beaſts (for the varietie of ſpotted skins and * furres which they yeeld) in great requeſt, and commendable: for other beaſts haue each one a proper colour of their owne, according to their kind: Lions there be all blacke, but they are found in Syria only. The ground of the Panthers skin is white, beſet all ouer with little black ſpots like eies. It is ſaid, that all foure-footed beaſts are wondertully delighted and enticed by the ſmell of Panthers; but their hideous looke and crabbed countenance, which they bewray by ſhewing their heads, skareth them as much againe: wherefore their maner is to hide their heads, and hauing trained other beaſts within their reach by their ſweet ſauour, they fly vpon them and worrie them. Some report, that they haue one marke on their ſhoulder reſembling the Moone, growing and decreaſing as ſhe doth, ſometime ſhewing a full compaſſe, and otherwhiles hollowed and pointed with tips like hornes. In all this kind and race of wild beaſts now adaies they cal the male * Variæ and Pardi, and great abundance there is of them in Africke and Syria. Some there be againe that make no other difference betweene the Luzernes and Leopards, and theſe Panthers, but only this, that the Panthers are white: and as yet I know no other marks to deſcry them by. There paſſed an old Act and Ordinance of the Senate, forbidding expreſly that any Panthers of Africke ſhould be brought into Italy. Againſt this edict, *Cn. Auſidius* a Tribune of the commons put vp another bill vnto the people; and granted it was, That for the ſolemnitie of the games Circenſes they might be brought ouer. *Scaurus* was the firſt man who in his Ædileſhip exhibited a ſhew vnto the people of 150 Luzernes together. After him *Pompey* the Great brought forth 410. The Emperor *Auguſtus* 420: who alſo in the yere that *Q. Tubero* and *Fabius Maximus* were Conſuls together (vpon the 4 day before the Nones of May, at the dedication of the Theatre of *Marcellus*) was the firſt of all others that ſhewed a tame Tyger within a cage: but the Emperor *Claudius* foure at once.

* i. The Luzernes or Luzernes.

* i. Luzernes or Libards.

Chap. XVIII.

¶ *Of the Tyger and his nature: of Camels, Chamelopardales, and when they were firſt ſeen at Rome.*

TYgers are bred in Hircania and India: this beaſt is moſt dreadfull for incomparable ſwiftneſſe, and moſt of all ſeen it is in the taking of her yong: for her litter (whereof there is a great

great number) by the hunters is ſtolne and caried away at once, vpon a moſt ſwift horſe for the purpoſe; lying in wait to eſpy when the dam is abroad: and ſhifteth this booty from one freſh horſe to another, riding away vpon the ſpur as hard as they can. But when the Tygreſſe comes and finds her den & neſt empty (for the male Tygre hath no care nor regard at all of the yong) ſhe runs on end after her yong ones, following thoſe that caried them away, by the ſent of their horſe footing. They perceiuing the Tygreſſe to approch, by the noiſe ſhe maketh, let fall or caſt from them one of her whelps: vp ſhe taketh it in her mouth, and away ſhe runneth toward her den, ſwifter for the burthen that ſhe carrieth. And preſently ſhe fetteth out again, followeth the queſt after her fawnes, and ouertaketh the Hunter that had them away. Thus runneth ſhe to and fro, vntill ſhe ſee that they be embarqued and gone; and then for very anger that ſhe hath not ſped of her purpoſe, ſhee rageth vpon the ſhore and the ſands for the loſſe of her Fawnes.

As for Camels, they are nouriſhed in the Levant or Eaſt parts among other heards of great cattell: two kindes there be of them, the Bactrians and the Arabick: differing herein, that the Bactrians haue two bunches vpon their backs; the other but one apiece there, but they haue another in their breſt, whereupon they reſt and ly. Both ſorts want the vpper row of teeth in their mouthes, like as bulls and kine. In thoſe parts from whence they come they ſerue all to carry packs like labouring horſes, and are put to ſeruice alſo in the wars, and are backed of horſmen: their ſwiftneſſe is comparable to that of horſes; they grow to a iuſt meaſure, and exceed not a certaine ordinary ſtrength. The Camell in his trauelling will not goe a iot farther than his ordinary iourney; nether will hee carry more than his accuſtomed and vſuall load. Naturally they doe hate horſes. They can abide to be foure daies together without drinke: and when they drinke or meet with water, they fil their skin full enough to ſerue both for the time paſt and to come: but before they drinke they muſt trample with their feet to raiſe mud and ſand, and ſo trouble the water, otherwiſe they take no pleaſure in drinking. They liue commonly fifty yeares, and ſome of them an hundred. Theſe creatures alſo otherwhile fall to be mad, ſo much as it is. Moreouer, they haue a deuice to ſplay euen the very females, to make them fit for the warres; for if they be not couered they become the ſtronger and more couragious.

Two other kinds of beaſts there be that reſemble in ſome ſort the Camels: the one is called of the Æthiopians, the Nabis, necked like an horſe, for leg and hoofe not vnlike the bœufe, headed directly like a Camell, beſet with white ſpots vpon a red ground, whereupon it taketh the name of Camelopardalus: and the firſt time that it was ſeen at Rome, was in the games Circenſes, ſet out by *Cæſar* Dictator. Since which time he comes now and then to Rome, to be looked vpon more for ſight, than for any wild nature that hee hath: whereupon ſome call her the ſauage Sheepe.

Chap. XIX.

¶ *Of the Chaus and Cephus.*

THe Hinde-wolfe, which ſome call Chaus, and the Gaules were wont to name Rhaphius, reſembling in ſome ſort a Wolfe with Leopards ſpots, were ſhewed firſt in the ſolemnitie of the games and plaies exhibited by *Cn. Pompeius* the Great. He alſo brought out of Æthyopia other beaſts named Cephi, *i.* Semivulpes, whoſe forefeet were like to mens hands, and the hinde feet and legs like thoſe of a man. He was neuer ſeen afterward at Rome.

Chap. XX.

¶ *Of the Rhinoceros.*

IN the ſame ſolemnities of *Pompey*, as many times elſe was ſhewed a Rhinoceros, with one horne and no more, and the ſame in his ſnout or muzzle. This is a ſecond enemy by nature the Elephant: hee fileth that horne of his againſt hard ſtones, making it ſharpe againſt he ſhould fight; and in his conflict with the Elephant he layes principally at his belly, knowing it to be more tender than the reſt. He is full as long as he, his legs are much ſhorter, and of the box colour.

Chap. XXI.

¶ *Lynces or Onces, and Marmozets or Apes, called Sphinges: of Crocutes, Monkies, English bœufes, Leococrutes, Eale: Æthiopian bulls, the Mantichore and Lycornes: of the serpents called Catoblepes, and the Basiliske.*

ONces are common, so are Marmozets, with a browne duskish haire, hauing dugs in their breast. Æthiopia breedeth them, like as many other monstrous beasts, to wit, horses with wings, and armed with hornes, which they cal Pegasi. Also the Crocutes [a kind of mastiue dogs] ingendred betwixt a dog and a Wolfe: these are able to crash with their teeth all they can come by: and a thing is no sooner downe their swallow, and got into their stomacke, but presently they digest it. Moreouer, the Cercopitheci, *i.* Monkies with black heads, otherwise haired like Asses, differing from other Apes in their cry. The Indians haue certain bœufs with one horne, and others with 3. Also the Leocrocuta, a most swift beast, as big almost as an he Asse, legged like an Hart, with a necke, taile, and breast of a Lion, headed like these grayes or Badgers, with a clouen foot in twaine: the slit of his mouth reacheth to his eares, in stead of teeth an entire whole bone. They report that this beast feigneth a mans voice. They haue also among them another beast named Eale, for bignes equall to the riuer-horse, tailed like an Elephant, either black or reddish tawny of colour: his mandibles or chawes resemble those of the Bore, he hath hornes aboue a cubit long, which he can stir or moue as he list: for being in fight he can set them both or one of them as he will himselfe, altering them euery way, one while streight forward to offend, otherwhiles bending byas, as he hath reason to nort or push toward, or auoid an enemie. But the most fell and cruell of all others of that country be the wild buls of the forrest, greater than our common field buls, most swift, of colour brended, their eies gray or blewish, their haire growing contrary, their mouth wide and reaching to their eares: their hornes likewise hard by, moueable; their hide as hard as a flint, checking the dent of any weapon whatsoeuer, and cannot be pierced: all other wilde beasts they chase and hunt, themselues cannot be taken but in pit-falls: in this their wildnesse and rage they dy, & neuer become tame. *Ctesias* writeth, that in Æthiopia likewise there is a beast, which he calls Mantichora, hauing three ranks of teeth, which when they meet together, are let in one within another like the teeth of combs, with the face and eares of a man, with red eies, of colour sanguine, bodied like a Lion, and hauing a taile armed with a sting like a Scorpion: his voice resembles the noise of a flute and trumpet sounded together: very swift he is, and mans flesh of all other he chiefly desireth. In India there be found bœufs whole hoofed, with single hornes; also a wilde beast named Axis [as some thinke a muske cat] with a skin like a fawne or hind-calfe, howbeit marked with more and whiter spots. This beast is consecrated to *Bacchus*, and vnder his protection. The Orsians of India hunt Apes, and take a number of them white all ouer. But the most fell and furious beast of all other is the Licorne or Monoceros: his body resembles a horse, his head a stag, his feet an Elephant, his taile a bore; he loweth after an hideous manner, one black horne he hath in the mids of his forehead, bearing out two cubits in length: by report, this wild beast cannot possibly be caught aliue. Among the Hesperian Æthiopians there is a fountain named Nigris, the head (as many haue thought) of the riuer Nilus, and good reason there is for it, al-ledged by vs before: neere which spring keepeth a wild beast called Catoblepes, little of body otherwise, heauy also and slow in al his limnes besides, but his head only is so great that his body is hardly able to beare it, he alwaies carrieth it downe to the earth, for if hee did not so, hee were able to kill all mankind; for there is not one that looketh vpon his eies, but he dies presently. The like propertie hath the serpent called a Basiliske: bred it is in the prouince Cyrenaica, and is not aboue twelue fingers bredth long: a white spot like a starre it carrieth on the head, and sets it out like a coronet or diadem: if he but hisse once, no other serpents dare come neere: hee creepeth not winding and crawling byas as other serpents doe, with one part of the body driuing, the other forward, but goeth vpright and aloft from the ground with one halfe part of his body: he killeth all trees and shrubs not onely that he toucheth, but also that hee breatheth vpon: as for grasse and herbes, those he findgeth and burneth vp, yea, and breaketh stones in sunder: so venimous and deadly he is. It is receiued for a truth, that one of them on a time

time was killed with a launce by an horsman from his horse-back, but the poison was so strong that went from his body along the staffe, as it killed both horse and man: and yet a silly weazle hath a deadly power to kill this monstrous serpent, as pernicious as it is [for many kings haue been desirous to see the experience thereof, and the manner how he is killed.] See how Nature hath delighted to match euery thing in the world with a concurrent. The manner is, to cast these weazles into the hole and ranies were they lye, (and easie they be to know by the stinking sent of the place about them:) they are not so soone within, but they ouercome them with their strong smell, but they die themselues withall; and so Nature for her pleasure hath the combat dispatched.

Chap. XXII.

¶ *Of Wolues.*

IT is commonly thought likewise in Italy, that the eye sight of wolues is hurtful; in so much, as if they see a man before hee espy him, they cause him to lose his voice for the time. They that be bred in Affrick and Ægypt, are but little, and with al nothing lively, but without spirit. In the colder clime, they be more cruell and eger. That men may be transformed into wolues, and restored againe to their former shape, we must confidently beleeue to be a lowd lie, or else giue credit to all those tales which we haue for so many ages found to be meere fables. But how this opinion grew first, & is come to be so firmly setled, that when we would giue men the most opprobrious words of defiance that we can, we terme them * *Verspelles*, I thinke it not much amisse in a word to shew. *Euanthes* (a writer among the Greekes, of good account and authority) reporteth, that he found among the records of the Arcadians, That in Arcadia there was a certaine house and race of the *Anæi*, out of which one euermore must needs be transformed into a wolfe: and when they of that family haue cast lots who it shall be, they vse to accompany the party vpon whom the lot is falne, to a certaine meere or poole in that country: when he is thither come, they turne him naked out of all his clothes, which they hang vpon an oke thereby: then he swimmeth ouer the said lake to the other side, and being entered into the wilderneſſe, is presently transfigured and turned into a wolfe, and so keepeth company with his like of that kind for nine yeeres space: during which time, (if he forbeare all the while to eat mans flesh) he returneth againe to the same poole or pond, and being swomme ouer it, receiueth his former shape againe of a man, saue only that he shall look nine yeeres elder than before. *Fabius* addeth one thing more and saith, That he findeth againe the same apparell that was hung vp in the oake aforesaid. A wonder it is to see, to what passe these Greekes are come in their credulity: there is not so shameleſſe a lye, but it findeth one or other of them to vphold and maintaine it. And therefore *Agriopas*, who wrote the Olympionicæ, telleth a tale of one *Dæmænetus Parrhasius*, That he vpon a time at a certain solemne sacrifice (which the Arcadians celebrated in the honour of *Iupiter Lycæus*) tasted of the inwards of a child that was killed for a sacrifice, according to the manner of the Arcadians (which euen was to shed mans bloud in their diuine seruice) and so was turned into a wolfe: and the same man ten yeeres after, became a man againe, was present at the exercise of publick games, wrestled, did his deuoir, and went away with victory home againe from Olympia. Ouer and besides, it is commonly thought and verily beleeued, that in the taile of this beast, there is a little string or haire that is effectuall to procure loue, and that when he is taken at any time, he casteth it away from him, for that it is of no force and vertue vnleſſe it be taken from him whiles he liues. He goeth to rut in the whole yere not aboue twelue dayes. When he is very hungry and can get no other prey, he feedeth vpon the earth. In the case of presages and fore-tokens of things to come, this is obserued That if men see a wolfe abroad, cut his way and turne to their right hand, it is good; but if his mouth be full when he doth so, there is not a better signe or more lucky in the world againe. There be of this kind that are called Hart-wolues, such as we said that *Pompey* shewed in the grand Cirque, brought out of Fraunce. This beast (they say) be he neuer so hungry when hee is eating, if he chaunce to look backe, forgetteth his meat, slinketh away, and seeketh for some other prey.

* Turn-coats.

Chap. XXIII.

¶ *Of Serpents.*

AS touching ſerpents we ſee it ordinary, that for the moſt part they are of the colour of the earth, wherein they lie hid: and an infinite number of ſorts there be of them. The ſerpent Ceraſtes hath many times foure ſmall hornes, ſtanding out double; with mouing whereof ſhe amuſeth the birds, and traineth them vnto her for to catch them, hiding all the reſt of her body.

Amphisbæna hath two heads as it were, namely one at the taile; as if ſhe were not hurtfull enough to caſt her poyſon at one mouth only. Some are ſcaled, others ſpotted and painted, but generally the venom of them all is deadly. There be of them that from the boughes of trees ſhoot and launce themſelues: in ſuch manner, as that we are not onely to take heed of ſerpents as they go and glide vpon the ground, but alſo to looke vnto them that fly as a dart or arrow ſent out of an engin. The Aſpides ſwell about the necke when they purpoſe to ſting: and no remedie is there for them that are ſtung and bitten by them, vnleſſe the wounded parts be cut off preſently. This peſtilent creature, as venomous as he is, hath one point yet of vnderſtanding or affection rather; you ſhall not ſee them wandring abroad but two and two together, male and female, as if they were yoked together: and vnneth or not at all can they liue alone without their mate; ſo that if one of them be killed, it is incredible how the other ſeeks to be reuenged: it purſueth the murderer, and knoweth him again among a number of people, be they neuer ſo many: him it courſeth, and layeth for his life; notwithſtanding what difficulties ſoeuer, he breaketh through all, be it neuer ſo far thither, and nothing may impeach this reuenging humor, vnleſſe ſome riuer be between to keep it backe, or that the party make ſpeed to eſcape away in great haſte. And I aſſure you, I am not able to ſay, whether Nature hath bin more free and prodigall in ſending among vs ſuch noiſome things, or giuing vs remedies againe for them. For to begin withall, ſhe hath afforded to this creature but a darke ſight, and dim eyes; and thoſe not placed in the forepart of the head, to ſee forward and directly, but ſet in the very temples. And hereof it is, that theſe ſerpents are raiſed oftner by their hearing than ſight.

Chap. XXIV.

¶ *Of the Rat of India called Ichneumon.*

BEſides the foreſaid infirmitie, there is mortall war between them and the Ichneumones or Rats of India. A beaſt this is well knowne to the Aſpis, in this regard eſpecially, that it is bred likewiſe in the ſame Ægypt. The manner of this Ichneumon is, to wallow oft times within the mud, and then to dry it ſelfe againſt the Sun: and when he hath thus armed himſelf as it were with many coats hardned in this manner, he goeth forth to combat with the Aſpis. In fight he ſets vp his taile, and whips about turning his taile to the enemie, and therein latcheth and receiueth all the ſtrokes of the Aſpis, and taketh no harme thereby: and ſo long he maintaineth a defenſiue battell, vntill he eſpy a time, turning his head a to-ſide, that hee may catch the Aſpis by the throat, and throtle it. And not content thus to haue vanquiſhed this enemie, he addreſſeth himſelfe to the conflict with another, as hurtful euery way & dangerous as the former.

Chap. XXV.

¶ *Of the Crocodile, Scinke, and Riuer-Horſe.*

THe riuer Nilus nouriſheth the Crocodile; a venomous creature, foure footed, as dangerous on water as land. This beaſt alone, of all other that keepe the land, hath no vſe of a tongue; he only moueth the vpper jaw or mandible, wherewith he biteth hard: and otherwiſe terrible he is, by reaſon of the courſe and ranke of his teeth, which cloſe one within another, as if two combes grew together. Ordinarily he is aboue eighteene cubits in length. The female layeth egs as big as geeſe do, and ſitteth euer vpon them out of the water: for a certaine naturall foreknowledge ſhe hath, how far the riuer Nilus will that yeare riſe when he is at the higheſt,

A higheſt and without it will ſhee be ſure to ſit. There is not another creature againe in the world, that of a ſmaller beginning, groweth to a bigger quantity. His feet be armed with claws for offence, and his skin ſo hard, that it will abide any injury whatſoeuer, and not be pierced. All the day time the Crocodile keepeth vpon the land, but he paſſeth the night in the water: and in good regard of the ſeaſon he doth the one and the other. When he hath filled his belly with fiſhes, he lieth to ſleep vpon the ſands in the ſhore: and for that he is a great and greedie deuourer, ſomewhat of the meat ſticketh euermore betweep his teeth. In regard whereof commeth the wren, a little bird called there Trochilos, and the king of birds in Italy: and ſhee for her victuals ſake, hoppeth firſt about his mouth, falleth to pecking or picking it with her little
B neb or bill, and ſo forward to the teeth, which he cleanſeth, and all to make him gap. Then getteth ſhee within his mouth, which he openeth the wider, by reaſon that he taketh ſo great delight in this her ſcraping and ſcouring of his teeth and chaws. Now when he is lulled as it were faſt aſleep with this pleaſure and contentment of his: the rat of India, or Ichneumon aboueſaid eſpieth his vantage, and ſeeing him lye thus broad gaping, whippeth into his mouth, and ſhooteth himſelfe downe his throat as quicke as an arrow, and then gnaweth his bowels, eateth an hole through his belly, and ſo killeth him.

Within the riuer Nilus there breeds another Serpent called Scincos, like in forme and proportion ſomewhat to the Crocodile, but not all ſo big as the Ichneumon: the fleſh whereof ſerveth for a ſingular Antidote or countre-poiſon; as alſo for to prouoke the heat of luſt in men.

C But to returne againe to the Crocodile: the miſchiefe that he doth is ſo great, that Nature is not content to haue giuen him one mortal enemy & no more; & therefore the dolphins alſo enter the riuer Nilus in deſpight of the Crocodiles, that take themſelues for kings there, as if this riuer were their peculiar kingdome: but ſeeing they be otherwiſe inferiour to the Crocodiles in ſtrength, who alwaies driue them away from preiding or feeding there, they deuiſe to ouermatch him in ſlie craft and ſubtilty, and ſo kill him. And in truth they haue certain fins or wings as it were vpon their backe, as trenchant & keene as kniues, properly made as it were, for this porpoſe. For ſurely all creatures are herein naturally very skilfull and cunning, to know not only their owne good, and what is for them, but alſo what may hurt and annoy their enemies. Ware they be what offenſiue weapons they haue, and of what force they are: they are not ignoD rant of fit occaſions and opportunities to take their vantage, ne yet of the weak parts of their occurrents, by which they may aſſaile and conquer them the ſooner. Thus the Dolphins knowing full well, that the skin of the Crocodiles belly is thin and ſoft, make as though they were afraid of them as he comes, and ſo diue vnder the water, vntill he be gotten vnder his belly, & then punch and cut it with the foreſaid ſharp-pointed finnes. Moreouer, there is a kind of people that cary a deadly hatred to the Crocodile, and they be called Tentyrites, of a certaine Iſle euen within Nilus, which they inhabite. The men are but ſmall of ſtature, but in this quarrell againſt the Crocodiles, they haue hearts of Lions, and it is wondrous to ſee how reſolute and courageous they are in this behalfe. Indeed, this Crocodile is a terrible beaſt to them that flie from him: but contrary, let men purſue him or make head againe, he runnes away moſt cowardE ly. Now, theſe Iſlanders be the only men that dare encountre him affront. Ouer and beſides, they will take the riuer, and ſwim after them, nay they wil mount vpon their backs, and ſet them like horſmen: and as they turne their heads, with their mouth wide open to bite or deuour them they will thruſt a club or great cudgell into it croſſe ouerthwart, and ſo holding hard with both hands each end thereof, the one with the right, and the other with the left, and ruling them perforce (as it were) with a bit and bridle, bring them to land like priſoners: when they haue them there, they will ſo fright them only with their words and ſpeech, that they compel them to caſt vp and vomit thoſe bodies againe to be enterred, which they had ſwallowed but newly before. And therefore it is, that this is the only Iſle which the Crocodiles wil not ſwim to: for the very ſmell and ſent of theſe Tentyrites is able to driue them away, like as the Pſelli with their ſaF uour put Serpents to flight. By report, this beaſt ſeeth but badly in the water: but be they once without, they are moſt quick ſighted. All the 4 winter months they liue in a caue, and eat nothing at all. Some are of opinion, that this creature alone groweth all his life: and ſurely a great time he liueth.

The ſame riuer Nilus bringeth forth another beaſt called Hippopotamus, a Riuer-horſe. Taller he is from the ground than the Crocodile: he hath a clouen foot like a bœuf: the back,

maine and haire of an horſe,and he hath his neying alſo. His muzzle or ſnout turneth vp: his G
taile twineth like the Bores,and his teeth likewiſe are crooked and bending downward as the Bores tusks,but not ſo hurtfull: the skin or hide of his backe vnpenetrable [whereof are made targuets and head-pieces of doubty proof that no weapon wil pierce] vnleſſe it be ſcked in water or ſome liquor. He eateth downe the ſtanding corne in the field: and folke ſay that he ſetteth downe beforehand where he will paſture and feed day by day: and when hee ſets forward to any field for his reliefe hee goeth alwaies backeward, and his tracts are ſeene leading from thence,to the end that againſt his return he ſhould not be forelaid nor followed by his footing

Chap. XXVI.

¶ *Who firſt ſhewed the riuer-Horſe and Crocodiles at Rome. Alſo the medicinable means found out by the ſaid dumbe creatures.* H

Marcus Scaurus was the firſt man,who in his plaies and games that he ſet out in his Ædileſhip,made a ſhew of one water-Horſe and foure Crocodiles, ſwimming in a poole or mote made for the time during thoſe ſolemnities.

The riuer-Horſe hath taught phyſitions one deuice in that part of their profeſſion called Surgerie: for he finding himſelf ouer-groſſe & fat by reaſon of his high feeding ſo continually,gets forth of the water to the ſhore,hauing ſpied afore where the reeds and ruſhes haue bin newly cut: and where he ſeeth the ſharpeſt cane and beſt pointed, hee fers his body hard vnto it,to pricke a certaine veine in one of his legs, and thus by letting himſelfe bloud maketh cuacuation: whereby his body, otherwiſe inclining to diſeaſes and maladies, is well eaſed of the ſuperfluous humor: and hauing thus done, hee ſtoppeth the orifice againe with mud, and ſo ſtancheth the bloud,and healeth the wound. I

Chap. XXVII.

¶ *What phyſicall Herbes certaine creatures haue ſhewed vs,to wit,the harts and ſtags,the Lizards,Swallowes, Torteiſes,the Weaſell,the Storke,the Bore,the Snake,Dragon, Panther, Elephant, Beares, ſtocke-Doues, houſe Doues, Cranes, and Rauens.* K

THe like deuice to this, namely of cliſters, we learned firſt of a Fowle in the ſame Egypt, called Ibis [or the blacke Storke.] This bird hauing a crooked and hooked bill, vſeth it in ſtead of a ſyringe or pipe to ſquirt water into that part, whereby it is moſt kinde and wholſome to auoid the doung and excrements of meat,and ſo purgeth and cleanſeth her body. Neither hath dumbe creatures directed vs to theſe feats onely practiſed by the hand, which might ſerue for our vſe,to the preſeruation of our health,and cure of diſeaſes: for the hart firſt ſhewed vs the vertue of the herbe Dictamnus or Dittanie, to draw arrowes forth of the bodie. Perceiuing themſelues ſhot with a ſhaft, they haue recourſe preſently to that herbe,and with eating thereof it is driuen out again. Moreouer, being ſtung with the Phalangium, a kinde of ſpider,or ſome ſuch venomous vermin, they cure themſelues with eating Crai-fiſhes,or freſh L
water crabs.

There is a certain herbe called Calaminth, moſt ſoueraigne and ſingular againſt the biting of ſerpents: wherewith the Lizards,whenſoeuer they haue fought with them,cure their wounds by applying it thereto.

Celendine[the greater]a moſt wholſome herbe for the eie ſight, Swallowes taught vs how to vſe; for with it they helpe their yong ones when their eies be ſore and put them to griefe.

The land Torteiſe by eating of a kinde of Sauorie or Marjerome,called *Cunila bubula*, armes himſelfe againſt poyſon when he ſhould fight with ſerpents.

The Weaſell vſeth Rue as a preſeruatiue when hee purpoſeth to hunt for Rats, in caſe hee M
ſhould fight with any of them.

The Storke feeling himſelfe amiſſe, goeth to the herbe Organ for remedy. And the Bore when he is ſicke is his owne phyſition,by eating iuy and crab fiſhes, ſuch eſpecially as the ſea caſteth vp to ſhore.

The Snake by reſtineſſe and lying ſtill all Winter,hath a certain membrane or filme growing

A ing ouer her whole body;but hauing recourſe to Fennel,with the iuice thereof ſhe caſteth that old coat that cloggeth her,and appeareth freſh,ſlick,and yong again. Now the manner of this her vncaſing,is this;ſhe beginneth firſt at the head,and turneth the skin ouer it, and thus ſhe is a whole day and a night a folding it backward,before the inſide of that membrane can be turned outward,and ſo ſhe is clean rid of it. Moreouer, when by lying ſtil & keeping cloſe all the Winter time,her ſight is become dim and dark,ſhe rubbeth and ſcoureth her ſelf with the ſaid herbe Fennell,and therewith annointeth and comforteth her eies. But if the ſcales that are ouergrowne her skin be hard and ſtiffe, not willing to part and be remoued,ſhe maketh no more adoe,but ſcratcheth them with ſharp juniper pricks.

The Dragon finding a certain lothing of meat,and ouerturning of her ſtomack in the ſpring time,cureth and helps the ſame with the iuice of the wild Lectuce.

B The barbarous people when they hunt the Panthers,rub the gobbets of fleſh,which they lay as a bait for them,with Aconitum(a kind of poiſon-ful herbe.) The beaſts haue no ſooner touched the fleſh,but preſently their throat ſwelleth,and they are ready to be ſtifled and choked: whereupon ſome haue called this venomous herbe Pardalianches,*i.* Libard baine,or choke Libard. But the wilde beaſt hath a remedy againſt this,namely, the ordure and excrements of a man:yea,and at other times alſo,when he is not thus poiſoned, ſo eager he is thereof, that when the ſhepheards for the nonce haue hanged them vp aloft in ſome veſſell aboue their reach, although they leap vp at them,he is ready to faint with mounting on high,& ſtraining to get the ſame,and in the end killeth himſelfe therwith,& lieth dead on the ground. And yet otherwiſe he is too vntoward for to be killed,and ſo long it is ere he will die,that when he is panched,and C his very guts come forth of his belly,he wil liue ſtil,and fight.

The Elephant if he chance to let the [Lizard] Chameleon go downe his throat amongſt other herbes or leaues(which this Lizard alwaies is like vnto in colour) he goeth ſtraightwaies to the wild Oliue,the only remedy he hath of this poiſon.

Beares,when they haue eaten Mandrage apples,licke vp piſmires to cure themſelues withal.

The Stag and Hind feeling themſelues poiſoned with ſome venomous weed among graſſe where they paſture,go by and by to the Artichoke,and therewith cure themſelues.

The Stock-doues,the Iais,Merles,Blackbirds,Ouſels,recouer their appetite to meat,which once in a yeare they loſe,with eating Bay-leaues that purge their ſtomack. Partridges,Houſe-
D doues,Turtledoues,and all Pullein,as Hens,Cocks,and Capons,do the like with Parietarie of the wall. Ducks,Geeſe,and other water fouls purge with the herb Endiue or Cichory. Cranes and ſuch like help themſelues that way with the Mariſh reed.

The Rauen when he hath killed the Chameleon,and yet perceiuing that he is hurt and poiſoned by him,flieth for remedy to the Laurell,and with it repreſſeth and extinguiſheth the venom that he is infected withall.

Chap. XXVIII.

¶ *The Prognoſtication of weather, taken by the obſeruation of dumbe creatures.*

E MOreouer, the ſame vniuerſall Nature hath giuen a thouſand properties beſides vnto beaſts: and namely,hath endued very many of them with the knowledge and obſeruation of the aire aboue,giuing vs good meanes by them diuers waies,to fore-ſee what weather we ſhall haue,what winds,what raine, what tempeſt will follow: which to decipher in particular,it is not poſſible,no more than to diſcourſe throughly of their other qualities they haue reſpectiue to the ſociety with every man. For they aduertiſe & warn vs before-hand of dangers to come,not only by their fibres and bowels (about the skill and preſage wherof,the moſt part of the world is amaſed) but alſo by other manner of tokens and ſignifications. When an houſe is readie to tumble downe,the mice goe out of it before: and firſt of all, the ſpiders with their F webs fall down. As for the flight of birds & their fore-tokening,called Augurie,there is an Art of it, and the knowledge thereof is reduced into a method, in ſo much as at Rome there was a colledge of Augurus inſtituted: by which it may appeare in what account & regard that ſacerdotall dignitie and profeſſion was. In Thracia, which is a cold and frozen countrie, the Fox al-
ſo will not paſſe ouer any riuer or poole that is frozen, before he trie the thickeneſſe of the yce

by

by his eare,and otherwiſe it is a beaſt moſt quicke of hearing. And obſerued it is,that men ne- G
uer venture thereupon,but when he goes to reliefe,or returneth from thence, and then he layes his eare cloſe to the yce, and gueſſeth thereby how thicke the water is frozen.

Chap. XXIX.

¶ *What cities and nations haue been vtterly deſtroyed by little beaſts.*

NOthing is more certain and notorious than this,that much hurt and dammage hath been known to come from ſmall contemptible creatures,which otherwiſe are of no reckoning and account. *M. Varro* writes,That there was a towne in Spaine vndermined by Connies: and another likewiſe in Theſſalie,by the Moldwarpes. In France the inhabitants of one citie H
were driuen out and forced to leaue it,by Frogs. Alſo in Affrick the people were compelled by Locuſts to void their habitations:and out of Gyaros an Iſland, one of the Cyclades, the Iſlanders were forced by Rats and Mice to flee away. Moreouer, in Italie the citie Amycle was deſtroied by ſerpents. In Æthiopia, on this ſide the Cynamolgi, there is a great country lieth waſt and deſart,by reaſon that it was diſpeopled ſometime by Scorpions, and a kinde of Piſmires called Solpugæ. And if it be true that *Theophraſtus* reporteth, the Treriens were chaſed by certaine wormes called Scolopendres. But now let vs returne to other kinds of wild beaſts.

Chap. XXX.

¶ *Of the Hyæna, Crocuta, Mantichora, Bieuers, and Otters.* I

AS touching Hyænes,it is commonly beleeued,that they haue two natures,and that euery ſecond yeere they change their ſexe,being this yeere males, and the next yeere females. Howbeit, *Ariſtotle* denieth it. Their necke and the mane therewith, together with the backe,are one entire bone without any ioint at all,ſo as they cannot bend their necke without turning the whole body about. Many ſtrange mattes are reported of this beaſt,and aboue all other,that he will counterfeit mans ſpeech,and comming to the ſheepheards cottages, will call one of them forth,whoſe name he hath learned,and when he hath him without,al to worrie and teare him in peeces. Alſo it is ſaid that he will vomit like a man,thereby to train dogs to come vnto him,and then will deuoure them. Alſo,this beaſt alone of all others,will ſearch for mens K
bodies within their graues and ſepulchres,and rake them forth. The female is ſeldome taken. He changeth his eies into 1000 diuers colours. Moreouer, if a dog come within his ſhadow,he preſently loſeth his barking and is quite dumbe. Againe by a kind of magicall charme or enchantment,if he goe round about any other liuing creature but three times, it ſhall not haue the power to ſtir a foot and remooue out of the place. The Lioneſſes of Æthiopia, if they be couered with any of this kinde, bring forth another beaſt called Leocrocuta, which likewiſe knowes how to counterfeit the voice both of man,and of other beaſts. He ſees continually with both eies:he hath one entire bone in ſtead of teeth in either iaw (and no gombs at all)wherwith he cuts as with a knife. Now theſe bones,becauſe they ſhould not wax dul and blunt with con- L
tinuall grating one againſt the other, they are incloſed each of them within a caſe or ſheath.

Iuba reports that the Mantichora alſo in Æthiopia reſembles mens language. Great ſtore of Hyenes be found in Affricke: which alſo yeelds a multitude of wild Aſſes. And one of the males is able to rule and leade a whole flocke of the female aſſes. This beaſt is ſo iealous, that they looke narrowly to the females great with young: for ſo ſoone as they haue foled,they bite off the cods of the little ones that be males,and ſo gueld them. But contrariwiſe,the ſhee aſſes when they be big,ſeeke corners,and keepe out of their way, that they might bring forth their young ſecretly without the knowledge of the Stallons:for deſirous they are to haue many males: ſo lecherous they be,and glad euermore to be couered.

The Bieuers in Pontus gueld themſelues,when they ſee how neer they are driuen,and be in danger of the hunters:as knowing full well,that chaſed they be for their genetoires: and theſe M
their ſtones, Phyſitians call Caſtoreum. And otherwiſe, this is a dangerous and terrible beaſt with his teeth. For verily,he will bite down the trees growing by the riuer ſides,as if they were cut with an axe. Looke where he catcheth hold of a man once, he neuer leaues nor lets looſe vntill he haue knapped the bone in ſunder,and heard it cracke againe. Tailed hee is like a fiſh, otherwiſe

A otherwiſe he reſembleth the Otter. Both theſe beaſts liue in the water altogether,and cary an haire ſofter than any plume or downe of feathers.

Chap. XXXI.

¶ *Of Frogs, Sea-calues, and ſtar-Liſards called Stelliones:*

THe venomous frogs and todes called Rubetæ,which liue both on land,and alſo in the water,yeeld many good things medicinable. It is ſaid,that their manner is to let goe & caſt from them all that is good within them,reſeruing only to themſelues all the poiſon: and when they haue bin at their food,take the ſame vp againe. The ſea calfe likewiſe liueth both in
B the ſea,and vpon the land:and hath the ſame nature and qualitie that the beiuer is, for hee caſteth vp his gall,which is good for many medicines:& ſo he doth the runnet in his maw,which is a ſingular remedy for the falling ſicknes: for wel he is ware,that men ſeek after him for theſe two things. *Theophraſtus* writeth, That the Liſards called Stelliones,caſt their old coat,like as Snakes do,but when they haue ſo done,they eat it vp againe, and ſo preuent men of the helpe thereby for the ſaid falling euill. He reporteth beſides,that their ſtings and bitings in Greece be venomous and deadly:but in Sicily harmleſſe.

Chap. XXXII.

¶ *Of red and fallow Deere.*

C THe Bucke or Stag,albeit that he be the moſt gentle and mild beaſt in the world,yet is he as enuious as the reſt,& loth to part with that which is good for others. Howbeit, if he chance to be ouerlaied with hounds,then gently of himſelfe hee hath recourſe to a man. Likewiſe,the Hinds when they are to calue, chuſe rather ſome place neere to the pathes and waies that are beaten with many ſteps,than ſecret corners; for feare of other wilde beaſts. They begin to goe to rut after the riſing of the ſtar Arcturus, which is much about the 5 of September:they goe 8 months:and otherwhiles bring 2 calues at once. Finding themſelues rhat they are ſped,they part companie with the Stags. But they againe ſeeing themſelues forſaken, fall into a kinde of rage for heate of luſt, and dig pits in the ground where they lie hidden. Then
D begin their muzzles to looke blacke,and ſo continue,vntill ſuch time as ſome raine waſh away that colour. The Hinds before they calue, purge themſelues with the herbe Seſelis or Silermonntaine, whereby they haue leſſe paine in their bearing, and more ſpeedy and eaſie deliuerance. After they are lightened of their burden, they know where two herbes be, which they haue preſently recourſe vnto, Wake-Robin,and the foreſaid Siler-mountain. When they haue eaten well thereof,they return preſently to their yong. And (for what ſecret reaſon in Nature, God knowes) their firſt milke muſt haue a taſte & talang of thoſe two herbs. Their little ones they practiſe and exerciſe to vſe their legs from the very beginning ſo ſoon as they be come into the world:teaching them euen then how they ſhould run away and flie. To high and ſteepe cragged rockes they bring them and there ſhew them how to leape,and withall acquaint them
E with their dens and places of harborough. And now by this time, the ſtags being paſt the heat of the rut, feed apace. But ſo ſoone as they be growne very fat, they ſeeke lurking places, and there abide,confeſſing as it were how heauie and vnweldie they be for fatneſſe,and how vncommodious it is vnto them. At other times they vſe in their flight to make ſtaies,and take their breath, and as they ſtand ſtill, to looke behinde them. But when they eſpie once the hounds and hunters to be neer vnto them then they fall to running afreſh. And this they doe for a pain that they haue in their guts,which are ſo weak & tender,that with a ſmall blow or ſtripe giuen vnto them they will burſt within their bellies. When they perceiue the hunt is vp,& heare the hounds crie,they preſently run but euer downe the winde, to the end that the ſent of their feet ſhould paſſe away with them. They take much pleaſure & delight in the ſound of ſheepheards
F pipes,and their ſong withall: When they ſet vp their eares, they are moſt quicke of hearing; when they let them hang downe, they be as deafe. Moreouer,they are very ſimple and fooliſh creatures:amuſed,yea,and amaſed they will be at euery thing,and keepe a wondring at it,inſomuch, as if an horſe, a cow, or an haiſer approach neere vnto them, they will ſtand gazing at it, and neuer regard the hunters neere by: or if they happen to ſpie him, they will looke at his

his very bow,and sheitue of arrows,as at strange and wondrous things. They passe the seas,swim- G
ming by flocks and whole heards in a long row,each one resting his head vpon the buttockes
of his fellow next before him: and this they do in course, so as the foremost retireth behinde
to the hindmost,by turnes one after another:and this is ordinarily obserued by those saylers
that passe from Cilicia to Cypres. And yet in their swimming they descry no land by the eye,
but only by their smelling haue an aime thereat. The males of this kind are horned, and they
(aboue all other liuing creatures) cast them euery yeare once,at a certaine time of the Spring:
and to that purpose a little before the very day of their mewing,they seek the most secret cor-
ners and most out of the way,in the whole ferreft. When they are pollards,they keep close hid-
den,as if they were disarmed:and all this they do,as if they enuied that men should haue good
of any thing that they had. And in very truth,the right horn(they say)can neuer be found, as if H
it had some rare and singular vertue in Physicke. A strange and maruellous thing, considering,
that in the parks they change them euery yere,insomuch as it is thought verily,that they hide
them within the earth. But burne whether of them ye will, the left as well as the right, this is
certain, That the smell and perfume thereof driueth serpents away,and discouereth them that
are subiect to the fits of the falling disease. A man may also know their age by their heads, for
euery yeare they haue one knag or branch more in their horns than before, vntill they come to
six:after which time,they come new euer alike;so as their age cannot be discerned any more by
the head,but the marke is taken by their mouth and teeth; for as they grow in age, they haue
few or no teeth at all, ne yet grow the branches out at the roote,whereas all the while they were
yonger,they vsed to haue them breake forth and standing out at the very forehead. After they I
be guelded once,neither cast they their hornes which they had before, neither grow there any
if they had none when they were libbed. At the first when they breake out againe, like they be
to the glandules or kernels of dry skin,that new put forth:then grow they with tender stalks,in-
to certain round and long knobs of the reed mace, couered all ouer with a certaine soft plume
downe like veluet. So long as they be destitute of their hornes,and perceiue their heads naked,
they go forth to relieue by night;and as they grow bigger and bigger,they harden them in the
hot sun,eftsoons making proofe of them against trees;and when they perceiue once that they
be tough and strong enough,then they go abroad boldly. And certainly some of them haue
been taken with green Iuie sticking fast and growing in their hornes,remaining there since the
time that they ran them(when they were but tender)against some trees,for triall whether they K
were good or no, and so chanced to race the Iuie from the wood of the tree. You shall haue
them somtime white of colour,and such an one was the hind that *Q. Sertorius* had about,which
he perswaded the people of Spaine to be his Sooth-sayer,& to tel him of things to come. This
kind of Deere maintaine fight with serpents, and are their mortall enemies: they will follow
them to their very holes,and there(by the strength of drawing and snuffing vp their wind at the
nostrils) force them out whether they wil or no:and therfore there is not so good a thing again
to chase away serpents,as is the smoke and smel of an Harts horn burnt. But against their sting
or biting,there is a singular remedy,with the runnet in the maw of a fawne or Hind-calfe kil-
led in the dams belly. It is generally held and confessed,that the Stag or hind liues long:for an
hundred yeres after *Alexander* the great,some were taken with golden collars about their necks, L
ouergrowne now with haire and growne within the skin:which collars,the said king had done
vpon them. This creature of all diseases is not subiect to the feuer,but he is good to cure it. I
haue known great ladies and dames of state,vse euery morning to eat the venison of red Deere,
and thereby to haue liued a great age and neuer had the ague:but it is thought this is a certain
remedy and neuer faileth,in case the stag be strucken starke dead at once with one wound and
no more.

CHAP. XXXIII.

¶ *Of the shag-haired and bearded Stagge like to a Goat: as also of the Chamæleon.* M

OF the same kind is the Goat hart,and differing only in the beard and long shag about the
shoulders,which they call Tragelaphis:and this breedeth no where but about the riuer
Phasis. Africke in a manner is the onely countrey that breedeth no stags and hinds: but
contrari-

A contrariwise,it bringeth Chamæleons, although India hath them ordinarily in greater num-
ber. In shape and quantitie it is made like a Lisard,but that it standeth higher and streighter
than the Lisards do,vpon his legs. The sides,flank,and belly,meet together,as in fishes:it hath
likewise sharp prickles,bearing out vpon the back as they haue: snouted it is, for the bignesse
not vnlike to a swine,with a very long taile thin and pointed at the end, winding round and en-
tangled like to vipers:hooked clawes it hath,and goeth slow, as doth the Tortoise: his body
and skin is rough and scaly,as the crocodiles:his eies standing hollow within his head,& those
be exceeding great,one neere vnto the other,with a very small portion betweene, of the same
colour that the rest of the body is:he is alwaies open eied,and neuer closeth them: he looketh
B about him not by mouing the ball of his eie,but by turning the whole body thereof: he gapes
euermore aloft into the aire, and is the onely creature aliue that feedeth neither of meat nor
drinke,but hath his nourishment of aire onely: about wilde fig-trees he is fell and dangerous,
otherwise harmlesse. But his colour naturally is very strange and wonderful, for euer and anon
he changeth it,as well in his eie,as taile and whole body besides:and looke what colour he tou-
cheth next,the same alwaies he resembleth,vnlesse it be red and white. When he is dead, hee
looketh pale and wan: very little flesh he hath in head and chawes, and about the ioint where
his taile is graffed to his rump;but in all the body besides, none at all. All his bloud is in his
heart,and about his eies:among other his bowels,he is without a spleen. Hidden hee lieth all
winter long,as Lisards do.

CHAP. XXXIIII.

C ### ¶ *Of the Buffe,or Tarandus: the Lycaon,and the Thos.*

IN Scythia there is a beast called Tarandus,which changeth likewise colour as the Chamæ-
leon: and no other creature bearing haire doth the same,vnlesse it be the Lycaon of India,
which(by report)hath a maned necke. As for the Thoes (which are a kinde of wolues some-
what longer than the other common wolues,and shorter legged, quicke and swift in leaping,
liuing altogether of the venison that they hunt & take,without doing any harme at all to men)
they may be said,not so much to change their hew,as their habit and apparell: for all winter
time they be shag-haired,but in summer bare and naked. The Tarandus is as big as an oxe,with
an head not vnlike to a stags,but that it is greater, namely carrying branched hornes: clouen
D hoofed,and his haire as deep as the Beares. The hide of his backe is so tough and hard, that
thereof they make brest-plates. He taketh the colour of all trees,shrubs,plants,floures,and pla-
ces wherein he lieth when he retireth for feare;and therefore seldome is he caught. But when
he list to looke like himselfe and be in his owne colour,he resembleth an Asse. To conclude,
strange it is that the bare body of a beast should alter into so many colours: but much more
strange it is and wonderfull,that the haire also should so change.

CHAP. XXXV.

¶ *Of the Pork-pen.*

E THe Porkpens come out of India and Africke:a kind of Vrchin or hedge-hog they be: ar-
med with pricks they be both;but the Porkpen hath the longer sharp pointed quilles,and
those,when he stretcheth his skin,he sendeth and shooteth from him: when the hounds
presseth hard vpon him,he flieth from their mouthes, and then takes vantage to launce at them
somwhat farther off. In the Winter he lieth hidden,as the nature is of many beasts to doe,and
the Beares aboue the rest.

CHAP. XXXVI.

¶ *Of the Beares,and how they breed and bring forth their young.*

F THey ingender in the beginning of winter, not after the common manner of other foure-
footed beasts,but lying both along,clasping and embracing one another: then they goe
apart into their dennes and caues, where the she beare thirtie daies after is discharged of
her burden,and bringeth forth commonly fiue whelps at a time. At the first, they seem to be a
lumpe

lump of white flesh without all form, little bigger than rattons, without eies, & wanting haire:
only there is some shew and apparance of claws that put forth. This rude lumpe, with licking G
they fashion by little & little into some shape; & nothing is more rare to be seen in the world,
than a she beare bringing forth her yong: and this is one cause that the male beares are not to
be seen in 40 daies, nor the semall for 4 moneths. If they haue no holes and dens for the pur-
pose, they build themselues cabbins of wood, gathering together a deale of boughes & bushes,
which they couch and lay artificially together, to beare off any shower, so as no raine is able to
enter; and those they strew vpon the floore with as soft leaues as they can meet withall. For the
first 14 daies (after they haue taken vp their lodging in this manner) they sleep so soundly, that
they cannot possibly be wakened, if a man should lay on and wound them. In this drow sinesse of
theirs, they grow wondrous fat. This their grease and fat thus gotten, is it that is so medicine- H
able, and good for those that shed their haire. These 14 days once past, they sit vpon their rump
or buttocks, and fall to sucking of their fore-feet, and this is all their food wherof they liue for
the time. Their yong whelpes, when they are starke and stiffe for cold, they huggle in their bo-
som and keep close to their warm breast, much like to birds that sit vpon their egs. A strange
and wonderful thing it is to be told, and yet *Theophrastus* believeth it, That if a man take bears
flesh during those daies, and seeth or bake the same, if it be set vp and kept safe it will grow ne-
uertheless. All this time they dung not, neither doth there appeare any token or excrement of
meat that they haue eaten: and very little water or aquositie it found within their belly. As for
bloud, some few small drops lie about the heart only, and none at all in the whole body besides
Now when spring is come, forth they go out of their den, but by that time the males are exceed- I
ding overgrown with fat: and the reason therof cannot be readily rendred: for as we said before,
they had no more but that fortnights sleep to fat them withall. Being now gotten abroad, the
first thing that they do, is to deuoure a certain herbe named Aron, *i.* Wake-robin, and that they
do to open their guts, which otherwise were clunged and grown together: and for to prepare
their mouths and teeth again to eat, they whet and set the edge of them with the yong shoots
and tendrons of the briers and brambles. Subiect they are many times to dimnesse of sight: for
which cause especially they seek after hony combs, that the bees might settle vpon them, and
with their stings make them bleed about the head, and by that means discharge them of that
heauinesse which troubleth their eies. The Lions are not so strong in the head, but beares bee
as weak and tender there: and therfore when they be chased hard by hunters, & put to a plunge, K
ready to cast themselues headlong from a rocke, they couer and arme their heads with their
fore-feet and pawes, as it were with hands, and so jump downe: yea and many times, when they
are baited in the open shew-place, we haue known them laid streaking for dead with one cuffe
or box of the eare giuen them with a mans fist. In Spain it is held for certain, that in their brain
there is a venomous qualitie; and if it be taken in drinke, drieth men into a kind of madnesse,
so as they will rage as if they were bears: in token whereof, whensoeuer any of them be killed
with baiting, they make sure work and burn their heads all whole. When they list, they wil go
on their two hinder feet vpright; they creep down from trees backward: when they fight with
buls, their manner is to hang with all their foure feet, about their head and hornes, and so with
the very weight of their bodies weatie them. There is not a liuing creature more craftie and L
fooliish withall, when it doth a shrewd turne. We finde it recorded in the Annales of the Ro-
mans, that when *M. Piso* and *M. Messala* were Consuls, *Domitius Ænobarbus* an Ædile Curule, vp-
on the 14 day before the Calends of October, exhibited 100 Numidian beares to be baited &
chased in the great Cirque, and as many Æthiopian hunters. And I maruell much, that the
Chronicle nameth Numidian, since it is certain, that no bears come out of Africke.

Chap. XXXVII.

¶ *Of the Rats of Pontus, and the Alps: also of Vrchins and Hedge-hogs.*

M

THe Rats of Pontus, which be onely white, come not abroad all winter: they haue a most
fine and exquisit taste in their feeding; but I wonder how the authours that haue written
this, should come to the knowledge of so much. Those of the Alpes likewise, *i.* Marmot-
tanes, which are as bigge as Brocks or Badgers, keepe in, during winter: but they are prouided
of

A of victuals before hand which they gather together and carry into their holes. And some say,
when the male or female is loden with grasse and herbs, as much as it can comprehend within
all the foure legges, it lieth vpon the backe with the said prouision vpon their bellies, and then
commeth the other, and taketh hold by the taile with the mouth, and draweth the fellow into
the earth: thus doe they one by the other in turnes: and hereupon it is, that all that time their
backes are bare and the haire worne off. Such like Marmotaines there be in Ægypt; and in the
same manner thay sit ordinarily vpon their buttocks, and vpon their two hinder feet they goe,
vsing their fore-feet in stead of hands.

Hedgehogs also make their prouision before-hand of meat for winter, in this wise. They wal-
low and roll themselues vpon apples and such fruit lying vnder foot, and so catch them vp with
their prickles, & one more besides they take in their mouth, & so carry them into hollow trees.
B By stopping one or other of their holes, men know when the wind turneth, and is changed
from North to South. When they perceiue one hunting of them, they draw their mouth and
feet close together with all their belly part, where the skin hath a thin downe and no pricks at
all to do harme, and so roll themselues as round as a foot-ball, that neither dog nor man can
come by any thing but their sharpe-pointed prickles. So soon as they see themselues past all
hope to escape, they let their water go & pisse vpon themselues. Now this vrine of theirs hath
a poisonous qualitie to rot their skin and prickles, for which they know well enough that they
be chased and taken. And therefore it is a secret and speciall policie, not to hunt them before
they haue let their vrine go; and then their skin is very good, for which chiefly they are hunted:
C otherwise it is nought euer after, and so rotten, that it will not hang together, but fall in pieces:
al the pricks shed off, as being putrified, yea although they should escape away from the dogs
and liue still: and this is the cause that they neuer bepisse and drench themselues with this pe-
stilent excrement, but in extremitie & vtter despaire: for they cannot abide themselues their
owne vrine, of so venomous a qualitie it is, & so hurtfull to their own body; and do what they
can to spare themselues, attending the vtmost time of extremitie, insomuch as they are ready
to be taken before they do it. When the Vrchen is caught aliue, the deuise to make him open
again in length, is to besprinkle him with hot water; and then by hanging at one of their hin-
feet without meat they die with famine: otherwise it it not possible to kill them and saue their
case or skin. There be writers who bash not to say, That this kinde of beast (where not those
D pricks) is good for nothing, and may well be missed of men: and that the soft fleece of wooll
that sheepe bear, but for these prickes were superfluous & to no purpose bestowed vpon man-
kind: for which the rough skin of these Vrchins, are brushes & rubbers made to brush & make Or rather in-
cleane our garments. And in very truth, many haue gotten great gain & profit by this commo- stead of razels
ditie & merchandise, and namely, with their crafty deuise of monopolies, that all might passe that share-
through their hands only: notwithstanding there hath not bin any one disorder more represssed men vse.
and reformation sought by sundry edicts and acts of the Senate in that behalfe: euery prince
hath been continually troubled hereabout with grieuous complaints out of all prouinces.

Chap. XXXVIII.

E

¶ *Of the Leontophone, the Once, Badgers, and Squirrils.*

TWo other kinds there be of beasts, whose vrine worketh strange and wonderfull effects.
The one is called Leontophonos, and he breedes in no country but where there be lions:
a little creature it is, but so venomous, that the lion (king of beasts, before whom al others
F tremble) for all his might and puissance, dieth presently if he taste neuer so little thereof. And
therfore they that chase the lion, get all the Leontophones that they can come by, burne their
bodies, and with the powder of them bestrew & season as it were the pieces of other flesh that
they lay for a bait in the forrest, and thus with the very ashes (I say) of his enemie, kill him: and
deadly and pernicious is it to the lion. No marueile therefore if the lion abhor & hate him, for
so soon as he espieth him, he crushes him with his pawes, and so killeth him without setting
tooth to his body. The Leontophone for his part againe, is as ready to bedrench him with his
vrine, knowing right well that his pisse is a very poison to the Lion.

In those countries were the Onces breed, their urine (after it is made) congealeth into a cer-
tain ycie substance, & waxes drie, & so it comes to be a certain pretious stone like a carbuncle,

glittering and ſhining as red as fire,and called it is Lyncurium. And vpon this occaſion many haue written,that Amber is ingendred after the ſame maner. The Onces knowing thus much, for very ſpight and enuie,couer their vrine with mold or earth,and this maketh it ſo much the ſooner to harden and congeale. G

The Grayes,Polcats, or Brocks, haue a caſt by themſelues,when they be affraid of hunters: for they will draw in their breath ſo hard,that their skin being ſtretched and puffed vp withall, they will auoid the biting of the hounds tooth,and checke the wounding of the hunter; ſo as neither the one nor the other can take hold of them.

The Squirrils alſo foreſee a tempeſt comming,and where the wind will blow: for looke in what corner the wind is like to ſtand,on that ſide they ſtop vp the mouth of their holes,and make an ouerture on the other ſide againſt it. Moreouer, a goodly broad buſh taile they haue, H wherewith they couer their whole body. Thus you ſee how ſome creatures prouide victuals againſt winter,others battle and feed with ſleepe onely.

Chap. XXXIX.

¶ *Of the Viper, Land-winkles or Snailes, and Lizards.*

OF all other ſerpents,it is ſaid,that the Viper alone lies hidden in the ground during winter,whereas the reſt keepe within cranies and clifts of trees,or elſe in the hollow chinkes of ſtones: and otherwiſe they are able to endure hunger a whole yeere, ſo they be kept from extreame cold: All the while during their retreat and lying cloſe within,they ſleepe as if I they were dead and depriued of their power to poyſon.

In like manner do Perwinkles and Snailes;but not only in the winter ſeaſon,but in Summer againe they lie ſtill,cleauing ſo hard to rocks & ſtones,that although by force they be plucked off and turned with their bellies vpward, yet they will not out of their ſhell. In the Baleare Iſlands there be a kinde of them called Cauaticæ,which neuer creepe out of their holes within the ground,neither liue they of any graſſe or greene herbe,but hang together like cluſters of grapes. Another ſort there is of them,but not ſo common,hiding themſelues within the couer of their ſhell,ſticking euer faſt vnto them:theſe lie alwaies vnder the ground,and were in times paſt digged vp onely about the Alpes, along the maritime coaſts:but now of late they be diſcouered in Veliternum alſo, where men begin to get them out of the earth. But the beſt of K them all and moſt commendable,are thoſe in the Iſland Aſtypelæa.

As touching Lifards (deadly enemies to the Snailes or Winkles aboue-named) men ſay they liue not aboue ſix moneths. In Arabia, the Lizards be a cubit in length:and in the mountain Niſa of India,they be foure and twenty foot long; ſome tawnie,ſome light red,and others blew of colour.

Chap. XL.

¶ *Of Dogges.*

AMong thoſe domeſticall creatures that conuerſe with vs, there be many things worth the knowledge:and namely, as touching dogges (the moſt faithfull and truſtie companions of all others to a man)and alſo horſes. And in very truth, I haue heard it credibly reported,of a dogge, that in defence of his maſter, fought hard againſt theeues robbing by the high way ſide:& albeit he were ſore wounded euen to death,yet would he not abandon the dead body of his maſter,but draue away both wild foule and ſauage beaſt, from ſeizing of his carkaſſe. Alſo of another in Epirus,who in a great aſſembly of people knowing the man that had murdered his Maſter flew vpon him with open mouth, barking and ſnapping at him ſo furiouſly, that he was ready to take him by the throat, vntill he at length confeſſed the fact that ſhould cauſe the dog thus to rage and ſome againſt him. There was a king of the Garamants exiled,and recouered his royall ſtate againe by the meanes of 200 dogs that fought for him againſt al thoſe M that made reſiſtance,and brought him home maugre his enemies, The Colophonians and Caſtabaleans,maintained certain ſquadrons of maſtiue dogs, for their war ſeruice:and thoſe were put in the vaward to make the head and front of the battell, and were neuer knowne to draw back and refuſe fight. Theſe were their truſtieſt auxiliaries and aid-ſoldiers,and neuer ſo needy as L

A as to call for pay. In a battell when the Cimbrians were defeated and put all to the ſword,their dogges defended the baggage,yea,and their houſes(ſuch as they were) carried ordinarily vpon charriots. *Iaſon* the Lycian had a dogge,who after his maſter was ſlaine, would neuer eat meat, but pined himſelfe to death. *Duris* maketh mention of another dogge,which he named Hircanus,that ſo ſoone as the funerall fire of king *Lyſimachus* his maſter was ſet a burning, leapt into the flame. And ſo did another at the funerals of king *Hiero*. Moreouer, *Phyliſius* reporteth as ſtrange a ſtory of king *Pyrrhus* his dogge:as alſo of another belonging to the tyrant *Gelo*. The Chronicles report of a dog that *Nicomedes* king of Numidia kept,which flew vpon the queene *Conſingis* his wife,& al to mangled and worried her,for toying and dallying ouerwantonly with the king her husband. And to goe no farther for examples,euen with vs here at Rome, *Volcatius*
B a noble gentleman (who tought *Cecelius* the ciuile law) as he returned home one euening late, riding vpon an hackney from a village neere the citie,was aſſailed by a theefe on the high way, but he had a dog with him that ſaued him out of his hands. *Celius* likewiſe,a Senator of Rome, lying ſicke at Plaiſance,chanced to be aſſailed by his enemies,well appointed and armed; but they were not able to hurt and wound him,by reaſon of a dog that he had about him,vntill ſuch time as they had killed the ſaid dog. But this paſſeth al,which happened in our time,and ſtandeth vpon record in the publicke regiſters,namely,in the yeere that *Appius Iunius* and *P. Silus* were Conſuls, at what time as *T. Sabinus* and his ſeruants were executed for an outrage committed vpon the perſon of *Nero*, ſonne of *Germanicus*: one of them that died had a dog which could not be kept from the priſon dore,and when his maſter was throwne down the ſtaires (cal-
C led Scalæ Gemoniæ) would not depart from his dead corps, but kept a moſt pitteous howling and lamentation about it,in the ſight of a great multitude of Romanes that ſtood round about to ſee the execution and the manner of it: and when one of the companie threw the dogge a piece of meat,he ſtraightwaies carried to the mouth of his maſter lying dead. Moreouer,when the carkaſſe was thrown into the riuer Tiberis,the ſame dog ſwam after, & made all the means he could to beare it vp aſlore that it ſhould not ſink:and to the ſight of this ſpectacle and fidelitie of the poore dogge to his maſter,a number of people ran forth by heapes out of the citie to the water ſide. They be the onely beaſts of all others that know their maſters;and let a ſtranger vnknown be come neuer ſo ſuddenly,they are ware of his comming, and will giue warning. They alone know their owne names,and all thoſe of the houſe by their ſpeech. Be the way neD uer ſo long, and the place from whence they came neuer ſo farre,they remember it,and can go thither againe. And ſurely, ſetting man aſide, I know not what creature hath a better memorie. As furious and raging as they be otherwhiles,yet appeaſed they will be and quieted, by a man ſitting down vpon the ground. Certes,the longer we liue,the more things we obſerue & marke ſtill in theſe dogges. As for hunting there is not a beaſt ſo ſubtle,ſo quick, & ſo fine of ſent,as is the hound:he hunteth and followeth the beſt by the foot,training the hunter that leads him by the coller and leaſh,to the very place where the beaſt lieth. Hauing once gotten an eie of his game,how ſilent & ſecret are they notwithſtanding?and yet how ſignificant is their diſcouerie of the beaſt vnto the hunter? firſt with wagging their taile, and afterwards with their noſe and E ſnout,ſnuffing as they doe. And therefore it is no maruell, if when hounds or beagles be ouer old,wearie,and blind,men carry them in their armes to hunt, for to wind the beaſt, and by the verie ſent of the noſe to ſhew and declare where the beaſt is at harbour. The Indians take great pleaſure to haue their falt bitches to be lined with tygres: and for this purpoſe,when they goe proud,they couple and tie them together,and ſo leaue them in the woods for the male tygres: howbeit they are neither the firſt nor ſecond litter of them,ſuppoſing that the dogs thus bred, will be too fierce and eger;but the third they nouriſh and bring vp. Semblably, thus doe the Gaules by their dogges that are ingendred of wolues: and in euerie chace and forreſt there be whole flockes of them thus ingendred,that haue for their guide,leader,and captain,one dogge or other:him they accompanie when they hunt;him they obey and are directed by: for ſurely, they keepe an order among themſelues,of gouernment and maſterſhip. This is knowne for cerF taine, that the dogges which be neere vnto Nilus,lap of the riuer, running ſtill and neuer ſtay while they are drinking, becauſe they will giue no vantage at all to be a prey vnto the greedie Crocodiles. In the voiage that *Alexander* the Great made into India,the king of Albania gaue him a dogge of an huge and extraordinarie bigneſſe. And *Alexander* taking great delight and contentment to ſee ſo goodly and ſo faire a dogge, let looſe vnto him firſt Beares, afterwards

wild Bores; and laſt of all, fallow Deere. But this dog making no reckoning of all this game, lay ſtill couchant, and neuer ſtirred nor made at them. This great Commander *Alexander*, a man of mighty ſpirit and high mind, offended at the lazineſſe and cowardiſe of ſo great a bodie, commanded that he ſhould be killed, and ſo he was. Newes hereof went preſently to the king of Albanie. Wherupon he ſent vnto him a ſecond dog, with this meſſage, That he ſhould not make triall of this too againſt ſuch little beaſts, but either ſet a Lion or an Elephant at him: ſaying moreouer, that hee had in all but thoſe two of his kinde: and if hee were killed likewiſe, hee were like to haue no more of that race and breed. *Alexander* made no ſtay, but preſently put out a Lion, and immediately he ſaw his backe broken and all to rent and torne by the dog. Afterwards he commanded to bring forth an Elephant, and in no ſight tooke he greater pleaſure, than in this. For the dog at the firſt with his long rough ſhagged haire, that ouerſpread his whole bodie, came with ful mouth thundering (as it were) and barking terribly againſt the Elephant. Soon after he leapeth and ſtieth vpon him, riſing and mounting againſt the great beaſt, now of one ſide, then of another: maintaining combate right artificially, one while aſſailing, another while auoiding his enemie: and ſo nimbly he beſtirreth him from ſide to ſide, that with continuall turning about to and fro, the Elephant grew giddie in the head, inſomuch as he came tumbling downe, and made the ground to ſhake vnder him with his fal. Bitches breed and beare young euery yeere lightly once: and the due time for them to be with whelpes is when they are full a yeere old. They goe with young threeſcore daies. Their puppies come blinde into the world: and the more milke they ſucke, the later it is ere they receiue their ſight: but as it is neuer aboue twenty daies ere they ſee, ſo they open not their eies vnder ſeuen daies old. Some ſay, that if a bitch bring but one at a litter, it will ſee by nine daies: if twaine, it will be ten daies firſt: and the more puppies ſhe hath, the more daies it will be in that proportion ere they ſee. Moreouer, that the bitch-whelpe that commeth of the firſt litter, ſee ſtrange bugs and goblins. The beſt of the whole litter is that whelpe that is laſt ere it begin to ſee: or elſe that which the bitch carries firſt into her kennell. The biting of mad dogs are moſt dangerous to a man, as we haue ſaid before, eſpecially during the dog-daies, while the dog ſtar Syrius is ſo hot: for they that are ſo bitten, lightly are affraid of water, which is a deadly ſigne. To preuent therefore that dogs fall not mad, it is good for thirtie or fortie daies ſpace, to mingle hens or pullins dung eſpecially with their meat: againe, if they be growing into that rage, or tainted already, to giue them Ellebor with their meat.

Chap. XLI.

¶ *Againſt the biting of a mad Dog.*

THe ſure and ſoueraigne remedy for them that are bitten with a mad dog, was reuealed lately by way of Oracle: to wit, the root of a wild roſe, called the ſweet brier or Eglantine. *Columella* writeth, That when a whelpe is iuſt fortie daies old, if his taile be bitten off at the nethermoſt joint, and the ſinew or ſtring that commeth after, be likewiſe taken away, neither the taile will grow any more, nor the dog fall euer to be mad. I haue my ſelfe obſerued, that among the prodigies it is reported, how a dog ſometime ſpake, as alſo that a ſerpent barked, that yeere when *Tarquine* the prowd was depoſed and driuen out of Rome.

Chap. XLII.

¶ *Of Horſes, and their nature.*

THe fame *Alexander* the Great, of whom ere-while we ſpake, had a very ſtrange and rare horſe, whom men called Bucephalus, either for his crabbed and grim looke, or elſe of the marke or brand of a buls head, which was imprinted vpon his ſhoulder. It is reported, that *Alexander* being but a child, ſeeing this faire horſe, was in loue with him, and bought out of the breed and race of *Philonicus* the Pharſalian, and for him paied ſixteene talents. He would ſuffer no man to ſit him, nor come vpon his backe, but *Alexander*; and namely, when he had the kings ſaddle on, and was alſo trapped with roiall furniture: for otherwiſe he would admit any whomſoeuer. The ſame horſe was of a paſſing good and memorable ſeruice in the warres: and namely, being wounded vpon a time at the aſſault of Thebes, he would not ſuffer *Alexander* to alight

alight from his back, and mount vpon another. Many other ſtrange and wonderfull things hee did: in regard whereof, when he was dead, the king ſolemnized his funerals moſt ſumptuouſly; erected a tombe for him, and about it built a city that bare his name, Bucephalia. *Cæſar* Dictator likwiſe had another horſe that would ſuffer no man to ride him but his maiſter: & the ſame horſe had his forefeet reſembling thoſe of a man: and in that manner he ſtands pourtraied before the temple of *Venus*, Mother. Moreouer, *Auguſtus Cæſar*, late Emperour of famous memory, made a ſumptuous tombe for an horſe that he had, whereof *Germanicus Cæſar* compiled a poeme. At Agrigentum there be ſeen Pyramides ouer many places were horſes were entombed. *Iuba* reporteth, That queene *Semiramis* loued a great horſe that ſhe had, ſo far forth, that ſhe was content he ſhould doe his kind with her. The Scythians verily take a great pride and glorie much in the goodnes of their horſes and Cauallerie. A king of theirs happened in combat and ſingle fight vpon a challenge to be ſlain by his enemie, and when he came to deſpoile him of his armes and roiall habit, the kings horſe came vpon him with ſuch furie, flinging and laying about him with his heeles, and biting withall, that he made an end of the conquerour-champion. There was another great horſe hoodwinked becauſe he ſhould couer a mare: but perceiuing after that he was vnhooded that he ſerued as a ſtalion to his own dam that foled him, ran vp to a ſteep rock with a downfall, and there for griefe caſt himſelfe down and died. We find alſo in record, That in the territorie of Reate there was a mare killed & all to rent an horſekeeper vpon the ſame occaſion. For ſurely theſe beaſts know their parentage, & thoſe that are next to them in bloud. And therefore we ſee that the colts will in the flocke more willingly keep company and ſort with their ſiſters of the former yere, than with the mare their mother. Horſes are ſo docile, and apt to learne, what we find in hiſtories, how in the army of *Sibaritanes*, the whole troup of horſemen had their horſes vnder them, and vſed to leap and daunce to certaine muſicke that they were wonted and accuſtomed vnto. They haue a fore-knowledge when battell is toward, they will mourne for the loſſe of their maiſters: yea, and other whiles ſhed teares and weep pitiouſly for loue of them. When king *Nicomedes* was ſlaine, the horſe for his owne ſaddle, would neuer eat meat after, but for very anguiſh died with famine. *Philarchus* reporteth, That king *Antiochus* hauing in battaile ſlaine one *Centaretus*, a brave horſman of the Gallogreeks or Galatians, became maiſter of his horſe, and mounted vpon him in triumphant wiſe: But the horſe of him that lay dead in the place, and vpon whom *Antiochus* was mounted, for very anger and indignation at this indignitie, paſſed neither for bit nor bridle, ſo as he could not be ruled; and ſo ran furiouſly among the cragges and rocks, where both horſe and man came downe headlong, and periſhed both together. *Philiſtus* writeth, That *Dyonyſius* was forced to leaue his horſe ſticking faſt in a quaue-mire, and got away: but the horſe after he had recouered himſelfe, and was gotten forth, followed the tracts of his maſter, with a ſwarm or caſt of bees ſetling in his mane: and this was the firſt preſage of good fortune that induced *Denis* to vſurp the kingdome of Sicilie. Of what perceiuance and vnderſtanding they be, it cannot be expreſt: & that know thoſe light horſmen full well that vſe to launce darts and iauelines from horſeback, by the hard ſeruice that they put their horſes to; which they doe with great dexteritie & reſolution in ſtraining, winding, and turning their bodies nimbly euery way. Nay, ye ſhall haue of them to gather vp darts and iauelines from the ground, and reach them againe to the horſman. And commonly we ſee it to be an ordinary matter with them in the great race or ſhew-place, when they are ſet in their geirs to draw the chariots, how they ioy when they are encouraged and praiſed; giuing no doubt a great proofe, and confeſſing that they are deſirous of glorie. At the ſecular ſolemnities, exhibited by *Claudius Cæſar*, in the Circenſian games, the horſes with the white liuery (notwithſtanding their driuer and gouernour, the charioter, was caſt and flung to the ground euen within the bars) wan the beſt prize & went away with the honour of that day. For of themſelues they brake and bare down whatſoeuer might impeach them of running the race thoroughout: they did all that euer was to be done againſt their concurrents and aduerſaries of the contrarie ſide, as well as if a moſt expert chariot-man had been ouer their backes to direct and inſtruct them. At the ſight wherof, men were aſhamed ta ſee their skill & art to be ouermatched & ſurmounted by horſes. And to conclude, when they had performed their race, as much as by law of the game was required, they ſtood ſtil at the very goale, and would no farther. A greater wonder and preſage was this in old time, that in the Circenſian games exhibited by the people, the horſes after they had flung and caſt their gouernour, ran directly vp to the Capitol, as well as if he had

had ſtood ſtill in his place,and conducted them; and there fetcht three turnes round about the temple of *Iupiter*. But the greateſt of all was this which I ſhall now tell,That the horſes of *Ratumenus*,who had woon the price in the horſe-running at Veij,threw their Mr. down;and came from thence,euen out of Tuſcane,as far as to the foreſaid Capitoll,carrying thither the Palme branch and chaplet of *Victory* woon by *Ratumenas* their Mr.of whom the gate Ratumena took afterwards the name at Rome. The Sarmatians minding to take a great iournie,prepare their horſes two daies before,and giue them no meat at all,only a little drinke they allow them, and thus they will ride them gallop 150 miles an end,and neuer draw bridle. Horſes liue many of them 50 yeres,but the mares not ſo long. In fiue yeres they come to their full growth,whereas ſtone horſes grow one yere longer. The making of good horſes indeed, and their beautie, ſuch as a man will chuſe for the beſt,hath bin moſt elegantly and abſoluteiy deſcribed by the Poet *Virgill*. And ſomewhat alſo haue I written of that argument, in my booke which I lately put forth,as touching Tournois and ſhooting from horſeback: and in thoſe points required,and there ſet downe,I ſee all writers in manner to agree. But for horſes that muſt be trained to run the race,ſome conſiderations are to be had and obſerued,different from horſes of other vſe and ſeruice. For whereas to other affaire and impoiments they may be brought when they are two yeeres old colts,and not vpward; to the Liſts they muſt not be brought to enter into any maſtries there,before they be full fiue yeres of age. The female in this kind go eleuen months compleat with young,and in the twelfth they fole:commonly the ſtalion and the mare are put together,when both of of them are full two yeeres old:and that about the Spring Equinoctiall,that is to ſay,in mid-March:but if they be kept aſunder vntill they are full 3 yeeres of age, they breed ſtronger colts. The Stalion is able to get colts vntil he be three and thirtie yers old. for commonly when they haue ſerued in the race,and run ſul twenty yeres,they are diſcharged from thence, & let go abroad for to ſerue mares. And men ſay that they will hold to 40 yeeres with a little helpe put to the forepart of his body,that he may be lifted vp handſomly to couer the mare. Few beaſts beſides are leſſe able to ingender and leape the female often, nor ſooner haue enough of them. For which cauſe they be allowed ſome ſpace between euery time that they do their kind. And in one yeere the moſt that the Stallion is able to do that way,is to couer 15 mares,and that is ſomewhat with the ofteneſt. If ye would coole the courage,& quench the luſt of a mare,ſhare and clip her mane. And yet are mares ſufficient to beare euery yeere, vntill they came to fortie. It is reported that an horſe hath liued 75 yeeres. Mares only of all other females,are deliuered of their foles, ſtanding on their feet:but loue them more than any other doe their young. Theſe foles verily, by report, haue growing on their forehead, when they be newly come into the world,a little blacke thing of the bigneſſe of a fig,called Hippomanes,& it is thought to haue an effectuall vertue to procure and win loue. The dam hath not ſo ſoon foled,but ſhe bites it off, and eats it her ſelfe: and if it chance that any bodie preuents her of it,and catcheth it from her,ſhe will neuer let the fole ſucke her. The verie ſmell and ſent thereof,if it be ſtollen away,will driue them into a fit of rage and madneſſe. If peraduenture a young fole loſe the damme,the other mares of the common heard that are milch nurſes, giue their teates to this poore orphane, and reare it vp in common. They ſay that for 3 daies after they be newly foled,the yong colts canot lay their mouth to the ground,and touch it. Moreouer,the hotter ſtomacked that a horſe is,the deeper he thruſteth his noſe into the water as he drinkes. The Scythians chuſe rather to vſe their mares in war-ſeruice than their ſtone-horſes: the reaſon is this,that their ſtaling is no hinderance to their pace in running their carriere, as it doth the horſe,who muſt needs then ſtand ſtill. In Portugall, along the riuer Tagus,& about Lisbon,certaine it is, that when the weſt-wind blowes, the mares ſet vp their tailes, and turne them full againſt it,and ſo conceiue that genitall aire in ſteed of naturall ſeed: in ſuch ſort, as they become great withall,and quicken in their time,& bring forth foles as ſwift as the wind, but they liue not aboue three yeres. Out of the ſame Spain,from the parts called Gallicia and Aſturia,certaine ambling iennets or nags are bred, which wee call Thieldones: and others of leſſe ſtature & proportion euery way,named Aſturcones. Theſe horſes haue a pleaſant pace by themſelues differing from others. For albeit they be put to their full pace,a man ſhall ſe them ſet one foot before another ſo deftly and roundly in order by turnes,that it would do one good to ſee it:and hereupon horſe-breakers (maſters) haue an art by cords to bring a horſe to the like amble. A horſe is ſubiect to the ſame diſeaſes in maner that a man is:& beſides, to the running of

of the bladder: like as all other beaſts that labour either in draught or carriage.

Chap. XLIII.

¶ *Of Aſſes.*

Varro writes, That *Q. Axius* a Roman Senator bought an Aſſe which bought him 400000 Seſterces,a price in my conceit aboue the worth of any beaſt whatſoeuer: & yet (doubtleſſe) he was able to do wondrous good ſeruice in carrying burdens,plowing of ground, and principally in getting of mules. The chapmen that vſe to buy theſe Aſſes haue a ſpeciall regard to the place from whence they come,and where they be bred: for in Achaia or Greece thoſe of Arcadia be in greateſt requeſt: and in Italy thoſe of Reate. This creature of all things can worſt away with cold; which is the cauſe that none of them are bred in Pontus. Neither do they ingender as other ſuch like beaſts,in the Spring Æquinoctiall,*i.* about mid-March,but in mid-Iune,about the time of the Sun-ſtead,when daies be at the longeſt. He Aſſes, the more you ſpare them in their worke,the worſe they are for it. The females are at the leaſt 30 months or two yeares and halfe old before they bring any yong; but 3 yeares is the ordinarie and due time indeed. They go as long as mares,and iuſt ſo many moneths,and after the ſame maner do they fole. But after they be couered,they muſt be forced to run preſently,with beating & laying on them,or elſe they will let go their ſeed again,ſo ſlippery is their wombe,and ſo vnapt to keep that which once it hath conceiued. They are ſeldome ſeene to bring forth two at once. The ſhe Aſſe when ſhe is about to fole ſeeketh ſome ſecret blinde corner to hide her ſelfe,that ſhe might not be ſeen of any man. She breeds all her life time,which commonly is vntill ſhee be 30 yeares old. They loue their yong foles exceeding well,but as ill or rather worſe can they abide any water. To their little ones they will go through fire,but if there be the leaſt brooke or rill between,they are ſo afraid of it,that they dare not once dip their feet therein. And verily drinke they will not,but of their accuſtomed fountaines within the paſtures where they vſe to go: but they will be ſure to chuſe their way,and go dry-foot to their drinke, and not wet their hooſe: neither will they go ouer any bridges,where the planks are not ſo cloſe drawn together and ioynted,but that they may ſee the water through vnder their feet;or the railes of each ſide ſo open that the riuer is ſeen. A ſtrange nature they haue by themſelues. Thirſty they are: but be they neuer ſo dry,if you change their watering place (as in trauelling vpon the way) they muſt be forced to drinke with cudgels,or elſe vnloden of their burdens. Whereſoeuer they be ſtabled,they loue to lie at large and haue roome enough. For in their ſleep they dream,& haue a thouſand phanſies appearing to them; inſomuch as they fling about them with their heeles euery way: now if they were not at libertie,and had not void ſpace enough, but ſhould beat againſt ſome hard thing in their way,they would ſoone be lame and halt withall. They be very gainfull and profitable to their maſters,yeelding more commoditie than the reuenues of good farme. It is well knowne, that in Celtiberia a ſhe Aſſe ordinarily with very breeding may be worth vnto them 400000 Seſterces. For the foling and bringing forth of the mules, the chief thing to be regarded in the ſhe Aſſe, is the haire about the eares and eie lids. For how ſoeuer the whole body beſides be of one and the ſame colour, yet ſhall the mules foled haue as many colours as were there,all ouer the skin. *Mecænas* was the firſt,that at feaſts made a daintie diſh of yong Aſſe foles,and preferred their fleſh in his time before the veniſon of wild Aſſes. But he being dead,they were not thought ſo good meat,nor accepted at all. If an Aſſe be ſeene to die,looke ſoon after that the whole race and kind of them will follow to the very laſt.

Chap. XLIV.

¶ *Of Mules.*

Betweene the he Aſſe and a Mare is a Mule ingendred, and foled in the 12 moneth; a beaſt of exceeding ſtrength to beare out all labor and trauell. For breeding of ſuch Mules, Mares are choſen that are not vnder foure yeres old,nor aboue ten. Men ſay,that they will driue away one another in both kinds,and not accompany together,vnleſſe they taſted the milk and ſucked the damme when they were yong,of that kinde which they would couer. And for this purpoſe

purpose they vse to steale away either the yong Asse soles, and set them in the dark to the teats of the Mare, or els the yong colts to suck of the she Asse. For there is a kind of Mule also that comes of a stone horse and a female Asse: but of all others they be vntoward and vnruly, and so slow withall, that it is vnpossible to bring them to any good seruice: and much more (as all things else) if they be far in age when they ingender. If when a she Asse hath taken the horse and be sped, there come an Asse and couer her againe, she will cast her fruit vntimely, and lose all: but it is not so if an horse couer her after an Asse. It is noted & found by experience, that seuen daies after an Asse hath foled, is the best time to put the male vnto her, and then soonest will she be sped: as also, that the he Asses being wearie with trauel, wil better couer the femals than otherwise being resty. That Asse is held for barren, which is not couered, nor conceiueth, before she haue cast her sucking or soles teeth, whereby the age is known: as also she that standeth not to the first couering, but loseth it. In old time they vsed to call those Hinuli which were begotten betweene a horse and an Asse: and contrariwise Mules, such as were ingendred of an Asse and a Mare. Moreouer this is obserued, that if two beasts of diuers kindes ingender, they bring forth one of a third sort, and resembling none of the parents: also, that such begotten in this maner, what kind of creatures soeuer they be, are themselues barren and fruitles, vnable either to beare or beget yong. And this is the cause that she mules neuer breed. We finde verily in our Chronicles, that oft times Mules brought forth yong soles, but it was alwaies taken for a monstrous and prodigious signe. And yet *Theophrastus* saith, that in Cappadocia ordinarily they do beare and bring forth soles: but they are a kind by themselues. Mules are broken of their flinging and wincing, if they vse often to drinke wine. It is found written in many Greeke authors, that if an he Mule couer a Mare, there is ingendred that which the Latins call Hinnus, that is to say, a little Mule. Between Mares and wild Asses made tame, there is ingendred a kind of Mules very swift in running, and exceeding hard hoofed, lanke and slender of bodie, but fierce and couragious, and vnneth or hardly to be broken. But the Mule that comes of a wild Asse and a female tame Asse, passeth all the rest. As for wild asses, the very best & floure of them be in Phrygia and Lycaonia. In Africke the flesh of their soles is held for excellent good meat, and such they cal Salisiones. It appeares in the Chronicles of Athens, That a mule liued 80 yeares. And reported thus much there is of it, That when they built the temple within the citadel thereof, this old Mule being for age able to do nothing els, would yet accompanie other Mules that laboured and caried stones thither, and if any were ready to fall vnder their lode, would seeme to relieue and hold them vp, and as it were incourage them to his power: insomuch as the people tooke so great delight and pleasure therein, that they made a decree and took order, that no corn-masters that bought and sold graine should beat this mule from their ranging siues, when they clensed or winnowed their corne, but that he might eat vnder them.

CHAP. XLV.

¶ *Of Buls, Kine, and Oxen.*

THe Bœufs of India are as high by report as Camels, and foure foot broad they are betwixt the horns. In our part of the world those that come out of Epirus are most commended, and beare the greatest price aboue all others, and namely those which they say are of the race & breed of king *Pyrrhus*, who that way was very curious. For this prince because he would haue a principall good breed, would not suffer the Buls to come vnto the kine and season them before they were both foure yeares old. Mighty big they were therefore, and so they continue of that kind vnto this day. Howbeit, now when they be but heifers of one yeare, or two yeres at the most (which is more tolerable) they are let go to the fellow and breed. Buls may wel ingender and serue kine when they be 4 yeares old; and one of them is able all the yeare long to goe with ten kine and serue their turne. They say moreouer, that a Bull after he hath leapt a Cow, and done his kind, if he go his way toward the right hand, he hath gotten an oxe calfe, but contrariwise a cow calfe if he take the left hand. Kine commonly take at their first seasoning, but if it chance that they misse and stand not to it, the 20 day after they seeke the fellow, and goe a bulling againe. In the tenth moneth they calue, and whatsoeuer falleth before that terme, neuer proueth nor commeth to good. Some write, That they calue iust vpon the last day of the tenth moneth complete. Seldome bring they forth two calues at a time. Their seasoning time commonly

commonly continueth 30 daies, namely from the rising of the Dolphin starre, vnto the day before the Nones of Ianuarie: howbeit some there be that go to fellow in Autumne. Certes in those countries where the people liue altogether of milke, they order the matter so, that their kine calue at all times, so as they are not without their food of fresh milke all the yeare long. Bulls willingly leape not aboue two kine at most in one day. Bœufs alone of all liuing Creatures can grase going backeward, and verily among the Gamarants they neuer feed otherwise. Kine liue not aboue 15 yeares at the vtmost: bulls and oxen come to 20: they be at their full strength when they are 5 yeres old. It is said that they will grow fat if they be bathed with hot water, or if a man slit their hide, and with a reed or pipe blow wind betweene the flesh and the skin, euen into their intrals. Kine, Buls, and Oxen are not to be despised as vnkindely, although they look but ilfauoredly, and be not so faire to the eie; for in the Alpes the least of bodie are the best milch kine: and the best laboring oxen are they which are yoked by the head, and not the neck. In Syria they haue no dewlaps at all hanging vnder the necke, but bunches standing vp on their backs in stead thereof. They of Caria also, a country of Asia, are ilfauored to sight, hauing betweene their neckes and shoulders a tumor or swelling hanging ouer; besides, their horns are loose, and as it were out of joint; and yet by report they are passing good of deed, and labor most stoutly. Furthermore, it is generally held for certain, that the black or white in this kind are simply the worst for work, and condemned. Buls haue lesser and thinner horns than either Kine or Oxen. The best time to bring the Oxe or Bull to the yoke, and make him draw, is at 3 yeres of age; after, it is too late; and before, with the soonest. A yong Stere is soonest trained and taught to draw, if he be coupled in one yoke with another that hath bin wrought already, and beaten to his work: for this beast is our companion, and labors together with vs, in earing and plowing the ground: and so highly regarded was the Oxe in old time of our forefathers, that we find it registred vpon record, That a certain Roman was judicially endited, accused, and condemned by the people of Rome, for that (to satisfie the minde of a wanton minion and catamite of his, who said he had not eaten any tripes all the while he was in the Countrie) he had killed an Oxe, yea although he was his one; and for this fact was banished, as if he had slain his Grangier, or Bailif of his husbandry. Buls are known to be of a good kind & couragious, by their fierce and grim countenance, for they alwaies looke crabbed and frowning; their eares are ouergrowne with stiffe haires, and their hornes so standing, as if they were euer disposed and ready to fight: but all his threatning and menaces appeare in his fore-feet; with them he giues warning, and as he is more and more angry, he bestirs himselfe now with the one foot, then with another, in course and by turnes, stamping and pawing with them against the ground, raising and flinging the dust about him aloft into the aire: and of all other beasts, hee alone after this maner inchafeth himselfe, and giues an edge vnto his anger. I my self haue seen them fight one with another for the mastrie: I haue seen them, being turned and swong round about in their fal, caught vp with the horns of others, and yet rise again & recouer themselues: I haue seene them lying along to be raised aloft from the ground; and when they haue run all amain with full pace, gallopping in their chariots, yet staid and stood still when they should, as if the charioters had caused them to rest. The Thessalians were they who deuised with prauncing horse to ride gallop close to the Buls head to take them by the horne, wryth their neckes down, and so kil them. The first that exhibited this pleasant shew to the people at Rome was *Cæsar* Dictator. The Bull yeeldeth the principal and most sumptuous sacrifice of all other vnto the gods, and therewith are they best pleased. This beast alone, of all that are long tailed, when it first comes into the world, hath not the taile of the full measure and perfect length as others, but it growes still, till it reach down to the very heels, and touch the ground. And hereupon it is, that in chusing calues for sacrifice, those are allowed for good and sufficient, whose taile reacheth to the joint of the haugh or gambrill: for if it be shorter, they will not be receiued & accepted of the gods. This also is noted by experience, that calues so little, that they be brought on mens shoulders to the altars to be killed, lightly are not sufficient to appease the gods. Neither are they pacified & well pleased with a beast that is lame or maimed; nor with that which is not appropriat vnto them, but to some other gods; ne yet with it that recules from the altar, and is loth to come to it. In the prodigies that we reade of antient times, we find very oft, that Kine and Oxen haue spoken: vpon report of which strange token, the Senat was euer wont to assemble in some open place abroad, and not to sit either in hall or chamber.

CHAP.

CHAP. XLVI.

¶ *Of the Bœufe or Oxe named Apis.*

IN Ægypt alſo they had an Oxe which the people of that country adored and worſhipped as a god, vnder the name of Apis. This beaſt was marked in this manner; with a white ſpot on his right ſide, like to the horns or tips of the new moon croiſſant; a knot or bunch vnder the tongue, which they called Cantharus: by their religion it was not lawfull to ſuffer him to liue aboue a certain number of yeres, at the end of which term they drown him in a certain Wel or fountain of their prieſts, and ſo ſhorten his life: and then with great ſorrow fall to ſeek another to ſubſtitute in his place; vntil they find him they mourne and waile, and in token of grief and ſorrow, they ſhaue their heads. But long they neuer are before they meet with another, & when they haue him, he is by the prieſts brought to Memphis, where he hath 2 Temples, which they call Thalami, *i.* bed-chambers; out of which all the people of Ægypt, as from an Oracle, are informed truly of things to come. For if this Oxe enter into the one of them it is a good luckie ſigne; but if he go into the other, then it portendeth great miſhap and infortunitie. And theſe be generall preſages to the whole nation. As for priuat perſons, he foretelleth them of things to come by the maner of taking meat at their hands, who come to know what fortune they ſhal haue. He turned away his head from the hand of *Germanicus Cæſar*, and would eat no meat when he offered it him; but he died for it, and that not long after. He is kept ſecret and cloſe for the moſt part: but if at any time he get forth and come abroad to be ſeen of the multitude of people, he goeth with a gard of tip-ſtaues to make way for him, and then a company of prety boies go chanting before him canticles and ſongs in his honour and praiſe: for it ſeemeth that he taketh heed to what they ſing, and is well pleaſed and contented thus to be worſhipped. Now theſe Choriſters beforeſaid preſently fall into a kinde of furious rage, and withall are inſpired with the gift of propheſie, and ſo foretell what will enſue. Once a yeare there is preſented vnto him a Cow, which hath marks likewiſe as he hath, but differing from his: and alwaies on what day this cow is found, the ſame day, by report, it dies. At Memphis there is a place within Nilus, which the inhabitants name Phiola, becauſe it is made in faſhion of a pot or boll; & therein duly euery yere the Ægyptians drowne two cups, one of ſiluer, another of gold, during ſeuen daies, dedicated to ſolemniſe the natiuitie of their god *Apis*. And this is one thing to be wondred at, that in that ſeuen-night ſpace there is not one that taketh hurt by Crocodiles: but let the eighth day come once, within ſix houres they returne to their former miſchieuous cruelty

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CHAP. XLVII.

¶ *The nature of Sheepe, and their breeding.*

SHeepe likewiſe are in great requeſt, both in regard they ſerue as ſacrifices to pacifie the gods; and alſo by reaſon their fleece yeelds ſo profitable an vſe: for euen as men are beholden to the bœufe for their principall food and nouriſhment which they labour for, ſo they muſt acknowledge, that they haue their cloathing and couerture for their bodies from the poore ſheep. The ram and ewe both are fit for generation from two yeres of age vpward, vntill they come to nine, and ſome alſo vntill they be ten yeares old. The lambes they yeane firſt are but little ones. They go all generally to rut about the ſetting of Arcturus, *viz.* vpon the third day before the Ides of May; and their heat laſteth vnto the full of the Ægle ſtarre, namely the tenth day before the Calends of Auguſt. They be with yong 150 daies: if any take the Ram after that time, the fruit they beare comes to no good, but proues weake. And ſuch lambes as fall after that ſeaſon they called in old time *Cordos*, *i.* later lambs. Many men do preferre theſe winter lambes before thoſe that come in ſpring: the reaſon is, becauſe it is much better they ſhould be ſtrong before the heat of ſummer and the long daies, than againſt the cold of winter and the ſhorteſt daies: and they think that this creature only taketh good by being yeaned in the midſt of winter. It is kinde and and naturall for Rams to make no account of young Hogrels, but to loath them: for they had rather follow after old ewes. Himſelfe alſo is better when he is old, and more luſty to leape the Ewes. To make him more milde and gentle they vſe to bore

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A bore his horne about the root neere vnto his eares. If his right cullion orſtone be tied vp, hee getteth ewe lambes; but if the left be taken vp, he getteth ramme lambes. If ewes be alone by themſelues without the flocke when it thundreth, they caſt their lambes. The only remedie is to gather them together, that by company and fellowſhip they may haue help. They ſay, that if the North winds blow when they take the ram, they will bring forth males; but if the South winds be vp, females. Moreouer, great regard there is had in this kind, to the mouthes of the rams: for look what colour the veines be vnder their tongue, of the ſame will the fleece be of the lambes, that is to ſay, of ſundrie colours, in caſe the veines were diuers coloured. Alſo the change of water and drinkes maketh them to alter their hew. In ſumme, two principall kinds there be of ſheep, that is to ſay, the one reared within houſe, and the other abroad in the field:
B the firſt is the tenderer, but the other more pleaſant meat and delicat in taſt; for thoſe within-houſe feed vpon briers and brambles. The clothes and couerings made of the Arabick wooll, are chiefe of all.

CHAP. XLVIII.

¶ *Diuers kinds of wooll and clothes.*

THe beſt wooll of all other, is that of Apulia: then, that which in Italy is named the Greek ſheepes wooll, but in other countries is named Italian. In the third ranke, the Mileſian ſheepe and their wooll, carrie the prize. The wooll of Apulia is of a ſhort ſtaple, and ſpecially in requeſt for cloaks and mantles, and nothing elſe. About Tarentum and Canuſium, the
C richeſt of this kind are found: as alſo at Laodicea in Aſia. As for whiteneſſe, there is none better than that which groweth along the Po, namely, about Piemount and Lombardie: and yet neuer to this day, a pound of it hath exceeded the price of an hundred ſeſterces. In all places they vſe not to ſheare ſheepe: for the manner of plucking their fells continueth ſtill in ſome countries. Sundry ſorts of colours there be in wooll, and ſo many, that we are not able to giue ſeuerall names ſo much as to thoſe that we call Natiue, *i.* growing vpon the ſheeps backe. For black fleeces, Spaine is chiefe; Pollentia for white; and grey, the tract of Piemont neere to the Alpes: Aſia for red hath no fellow, and ſuch kind of wools are called Erythrææ, In Bœtia likewiſe, that is to ſay, in the kingdome of Granade and Andaluſia, the ſame colour is to be found.
D Neere to Canuſia, the ſheepe be deepe yellow or tawnie: and about Tarentum, they are of a browne and duskiſh colour. Generally, all kind of wools newly ſhorne or plucked, vnwaſht and greaſy ſtill, be good and medicinable. About Iſtria and Liburnia, the ſheeps fleece reſembleth haire rather than wooll, nothing at all good for to make frized clothes with a high nap: but ſerueth only for the Artizan or workman in Portugall, whoſe artificial weauing in net or ſcutcheon work with ſquares, commends this wooll. The like wooll is common about Piſſenæ in the prouince Narbonenſis, *i.* Languedoc in Fraunce: and ſuch is found in Ægypt: the cloth made thereof, after it is worne bare, is then died and ſerueth new againe, and will weare ſtill and laſt a mans life. The courſe rough wooll with the round great haire, hath been of ancient time highly commended and accounted of in tapeſtrie worke: for euen *Homer* himſelfe witneſſeth, that
E they of the old world vſed the ſame much, and tooke great delight therein. But this tapeſtry is ſet out with colours in Fraunce, after one ſort, and among the Parthians after another. Moreouer, wooll of it ſelfe driuen together into a felt without ſpinning or weauing, ſerueth to make garments with: and if vinegre be vſed in the working of it, ſuch felts are of good proof to bear off the edge and point of the ſword, yea and more than that, they wil check the force of the fire. And the laſt cleanſing and refuſe thereof (when it is taken out of the coppers and leads of thoſe that haue the fulling and dreſſing thereof) ſerues for flock-worke and to ſtuffe mattreſſes: an inuention (as I ſuppoſe) which came firſt out of France: for ſurely theſe flocks and quilted mattreſſes, are at this day diſtinguiſhed and knowne one from another by French names. But I am not able eaſily to ſet downe at what time firſt this work manſhip began: for certaine it is that in old time men made them pallets and beds of ſtraw, or elſe lay vpon bare mats, like as now adays
F ſouldiers in the camp make ſhift with hairy rugges. As for our mantles, frized deep both without and within, they were inuented & came to vſe firſt, no longer ſince than in my fathers daies: as alſo theſe hairy counterpoints and carpets. For the ſtudded caſſocks that Senatours and noble men of Rome do weare, begin but now for to be wouen after the manner of deep frieze rugges. Wooll that is blacke, will take no other hew, nor be dyed into any colour.

As

As touching the manner how to die other wools, we wil speake in conuenient place, namely, G when we shall treat of the purples and sea shell fishes, and of certain hearbs good for that purpose. *M. Varro* writeth, That within the temple of *Sangus*, there continued vnto the time that he wrote his booke, the wooll that ladie *Tanaquil*, otherwise named *Cata Cæcilia*, spun: together with her distaffe and spindle: as also, within the chappell of Fortune, the very roiall robe or mantle of Estate, made with her owne hands after the manner of water-chamlot in waue worke, which *Seruius Tullus* vsed to weare. And from hence came the fashion & custome at Rome, that when maidens were to be wedded, their attended vpon them a distaffe, dresst and trimmed with kembed wool, as also a spindle and yearn vpon it. The said *Tanaquil* was the first that made the coat or cassock wouen right out all thorough, such as new beginners (namely, young souldiers, barristers, & fresh brides) put on vnder their white plaine gownes, without any guard of purple. H The waued water Chamelot, was from the beginning esteemed the richest and brauest wearing. And from thence came the branched damaske in broad workes. *Fenestella* writeth, That in the latter time of *Augustus Cæsar* they began at Rome to vse their gownes of cloth shorne, as also with a curled nap. As for those robes which are called Crebræ and Papaueratæ, wrought thick with floure-worke, resembling poppies; or pressed euen and smooth; they be of greater antiquitie: for euen in the time of *Lucilius* the Poet, *Torquatus* was noted and reprooued for wearing them. The long robes embrodered before, called Prætextæ, were deuised first by the Tuscanes. The Trabeæ ware roiall robes, and I find that kings & princes only ware them. In *Homers* time also they vsed garments embrodered with imagerie and floure worke: & from thence came the triumphant robes. As for embroderie it selfe and needle-work, it was the Phrygians inuention: I and hereupon embroderers be called in Latine *Phrygiones*. And in the same Asia, king *Attalus* was the first that deuised cloth of gold: and thence come such clothes to be called Attalica. In Babylon they vsed much to weaue their cloth of diuers colours, and this was a great wearing among them, & clothes so wrought were called *Babylonica*. To weaue cloth of tissue with twisted threeds both in woofe and warp, and the same of sundry colours, was the inuention of Alexandria, and such clothes and garments were named Polymita. But France deuised the scutchion, square, or lozenge damask-worke. *Metellus Scipio*, among other challenges and imputations laid against *Capito*, reptoched and accused him for this, That his hanging s and furniture of his dining chamber, being Babylonian worke or cloth of Arras, were sold for 800000 sesterces: and such like of late daies stood prince *Nero* in 400 hundred thousand sesterces, *i.* 40 millions. The K embrodered long robes of *Seruius Tullus*, wherewith he couered and arraied all ouer the Image of *Fortune*, by him dedicated, remained whole and sound vnto the end of *Scianus*. And a wonder it was, that they neither fell from the image, nor were moth-eaten in 560 yeares. I haue my selfe seen the sheeps fleeces vpon their backs while they be aliue, died with purple, with scarlet in grain, and the violet liquor of the fish Murex: by the means of certaine barks of a foot and a halfe long dipped in these colors, and so imprinted and set vpon their fleeces: as if riotous wannes and superfluitie should force Natures work, and make wooll to grow of that colour. As for the sheep it selfe, she is knowne to be kindly enough by these marks, If she be short legged, and wel woolled vnder the bellie; for such as were naked there and pilled, they condemned and held for naught, and those they called Apicæ. In Syria, sheep haue tailes a cubit long, and they L beare most wooll there. To lib lambs before they be fiue moneths old, it is thought to be with the sooneſt, and daungerous.

Chap. XLIX.

¶ *Of a beast called Musmon.*

THere is in Spaine, but especially in the Isle Corsica, a kind of Musmones, not altogether vnlike to sheep, hauing a shag more like the haire of goats, than a fleece with sheepes wooll. That kind which is engendred between them and sheepe, they called in old time M Vmbri. This beast hath a most tender head, and therefore in his pasture he is forced to feed with his taile to the sunne. Of all liuing creatures, those that bare wooll are most foolish: for take but one of them by the horne and lead him any whither, all the rest will follow, though otherwise they were afraid to go that way. The longest that they liue in those parts, is 9 yeares; howsoeuer in Æthiopia they come to 13. In which country, goats also liue 11 yeres, whereas in other

A other countries of the world, for the most part, they passe not eight. And both sorts, as well the one as the other, be sped within foure leapings.

Chap. L.

¶ *Of Goats, and their breeding.*

GOats bring forth foure kids otherwhiles, but that is very seldome. They goe with young fiue months as ewes do. Shee goats waxe barren with fatnesse. When they be come once to be three yeares old, they are not so good to breed: nie yet when they be elder, and namely, being past foure yeares of age. They begin at the seuenth month, euen whiles they sucke B their dammes. And as well the bucke as the Doe are held the better for breed, if they be nott, and haue no hornes. The first time that the shee goats are leaped, they stand not to it: the second leaping speedeth better, and so forward. They chuse willingly to take the buck in the month of Nouember, that they might bring kids in March following, when all shrubs put forth and begin to sprout and bud, for them to brouze. And this is sometime when they be a yeare old, but they neuer faile at two yeares: yea and when they be full three, they are not vtterly decayed and done, but are good still: for they beare 8 yeares. Subject they be in cold weather, to cast their young and yeane vntimely. The Doe, when she perceiueth her eies dimme and ouer-cast either with pin and web or catarract, pricketh them with the sharp point of some bulrush, and so letteth them blood: but the bucke goeth to the brier and doth the like. *Mutianus* reporteth, that C he had occasion vpon a time to mark the wit of this creature: It happened, that vpon a narrow thinne plank that lay for a bridge, that one goat met another comming both from diuers parts: now by reason that the place was so narrow that they could not passe by nor turne about, ne yet retire backwards blindly, considering how long the plank was & so slender withall; moreouer, the water that ran vnderneath ran with a swift streame, and threatned present death if they failed and went besides: *Mutianus* (I say) affirmeth, that he saw one of them to lie flat down, and the other to goe ouer his backe. As for the male goats, they are held for the best which are most camoise or snout nosed, haue long eares, and the same slit in, with great store of shag haire about their shoulders. But the mark to know the kindest female is this, they haue two lappets, locks, or plaits as it were of haire, hanging downe along their bodie on either side from their D neck. They haue not al of them hornes, but some are nott; but in those which are horned, a man may know their age by the number of the knots therein more or lesse: and in very truth the nott shee goats are more free of milke. *Archelaus* writeth, that they take their breath at the eares, and not at the nostrils: also that they be neuer cleare of the ague. And this haply is the cause, that they are hotter mouthed, and haue a stronger breath than sheepe, and more egre in their rut. Men say moreouer, that they see by night as well as by day: therefore they that when euening is come see nothing at all, recouer their perfect sight again by eating ordinarily the liuer of goats. In Cilicia and about the Syrtes, the people clad themselues with goats haire, for there they shere them as sheep. Furthermore it is said, that goats toward the Sun-setting, cannot in their pasture see directly one another, but by turning taile to taile: as for other houres of the day, E they keep head to head, & range together with the rest of their fellowes. They haue all of them a tuft of haire like a beard hanging vnder their chin, which they call Aruncus. If a man take one of them by this beard and draw it forth of the stock, all the rest will stand still gazing thereat, as if they were astonied, and so wil they doe if any of them chaunce to bite of a certaine hearb. Their teeth kill trees. As for an oliue tree, if they doe but lick it, they spoile it for euer bearing after: and for this cause they be not killed in sacrifice to *Minerua*.

Chap. LI.

¶ *Of Swine, and their natures.*

F SWine goe a brimming from the time that the Westerne wind Fauonius beginnes to blow, vntill the spring Æquinoctiall: and they take the bore when they be eight months old: yea in some places at the fourth month of their age, and continue breeding vnto the seuenth yeare. They farrow commonly twice a yeare: they be with pig foure months. One sow may bring at one farrow twenty pigges, but reare so many she cannot. *Nigidius* saith, that those pigs

which are farrowed ten daies vnder or ten daies ouer the ſhorteſt day in the yeare, when the ſun entreth into Capricorn, haue teeth immediatly. They ſtand lightly to the firſt brimming, but by reaſon that they are ſubject to caſt their pigs, they had need to be brimmed a ſecond time. Howbeit the beſt way to preuent that they doe not ſlip their young, is to keepe the bore from them at their firſt grunting and ſeeking after him, nor to let them be brimmed before their ears hang downe. Bores be not good to brim ſwine after they be three yeres old. Sowes when they be wearie for age that they cannot ſtand, take the bore lying along. That a ſow ſhould eat her own pigs, it is no prodigious wonder. A pig is pure & good for ſacrifice, 5 daies after it is farrowed; a lamb, when it hath been yeaned 8 daies; and a calfe, being 30 daies old. But *Gornucanus* ſaith, That all beaſts for ſacrifice which chew cud, are not pure and right for that purpoſe, vntill they haue teeth. Swine hauing loſt one eie, are not thought to liue long after; otherwiſe they may continue vntill they be fifteen yeares old, yea & ſome to twenty. But they grow to be wood and raging otherwhiles: and beſides are ſubject to many maladies more, & moſt of all to the ſquinancie, and wen or ſwelling of the kernels in the neck. Will ye know when a ſwine is ſick or vnſound, pluck a briſtle from the back and it will be bloudie at the root: alſo he will cary his neck atone ſide as he goeth, A ſow, if ſhe be ouer-fat, ſoone wanteth milke; and at her firſt farrow bringeth feweſt pigs. All the kind of them loue to wallow in dirt and mire. They wrinkle their taile, wherin this alſo is obſerued, that they be more likely to appeaſe the gods in ſacrifice, that rather writh & turn their tailes to the right hand, than the left. Swine wil be fat and wel larded in ſixtie daies, and the rather, if before you begin to frank them vp, they be kept altogether from meat three daies. Of all other beaſts, they are moſt brutiſh; inſomuch as there goes a pleaſant by-word of them, and fitteth them well, *That their life is giuen them inſtead of ſalt*. This is known for a truth, that when certaine theeues had ſtolne and driuen away a companie of them, the ſwinheard hauing followed them to the water ſide (for by that time were the theeues imbarged with them) cried aloud vnto the ſwine, as his manner was: whereupon they knowing his voice, learned all to one ſide of the veſſel, turned it ouer and ſunke it, tooke the water, and ſo ſwam againe to land vnto their keeper. Moreouer, the hogs that vſe to lead and goe before the heard, are ſo well trained, that they wil of themſelues goe to the ſwine-market place within the citie, & from thence home againe to their maiſters, without any guid to direct them. The wild bores in this kind, haue the wit to couer their tracks with mire, and for the nones to run ouer mariſh ground where the prints of their footing will not be ſene; yea and to be more light in running, to void their vrine firſt. Sowes alſo are ſplaied as well as camels, but two daies before, they be kept from meat: then hang they by the fore-legs, for to make inciſion into their matrice, and to take forth their ſtones: and by this means they will ſooner grow to be fat. There is an Art alſo in cookerie, to make the liuer of a ſow, as alſo of a gooſe, more daintie (and it was the deuiſe of *M. Apicius*) namely, to feed them with drie figges, and when they haue eaten till they bee full, preſently to giue them mead or honied wine to drink, vntill they die with being ouercharged. There is not the fleſh of any other liuing creature, that yeeldeth more ſtore of diſhes to the maintenance of gluttonie, than this; for fiftie ſundrie ſorts of taſtes it affordeth, whereas other haue but one a peece. From hence came ſo many edicts and proclamations publiſhed by the Cenſors, forbidding and prohibiting to ſerue vp at any feaſt or ſupper, the belly and paps of a ſow, the kernels about the neck, the brizen, the ſtones, the womb, and the fore-part of the bores head: and yet for all that, *Publius* the Poet and maker of wanton ſongs, after that he was come to his freedom, neuer (by report) had ſupper without an hogs belly with the paps: who alſo to that diſh gaue the name, and called it Sumen. Moreouer, the fleſh of wild bores came to be in great requeſt and was much ſet by: in ſuch ſort, as *Cato* the Cenſor in his inuectiue orations, challenged men for brawne. And yet when they made three kinds of meat of the wild bore, the loine was alwaies ſerued vp in the mids. The firſt Romane that brought to the table a whole bore at once was *P. Seruilius Rullus*, father of that *Rullus*, who in the time that *Cicero* was Conſull, publiſhed the law Agraria, as touching the diuiſion of lands. See how little while ago it is ſince theſe ſuperfluities began, which now are taken vp ſo ordinarily euerie day. And yet the thing was noted and recorded in the Annals, as ſtrange and rare; no doubt for this intent, To repreſſe theſe inordinate enormities. One ſupper then or feaſt was taxed and reprooued therein at the beginning: but now, two and three bores at a time are ſerued vp whole and eaten together.

CHAP.

CHAP. LII.

¶ *Of Parks for wild beaſts.*

THe firſt man of the long robe that deuiſed parks as well for theſe bores, as for other deere and ſauage beaſts, was *Fulvius Lippinus*, who in the territorie of *Tarquinij* began to keepe and feed wild beaſts for his game. And long it was not but others followed his ſteps, to wit, *L. Lucullus* and *Q. Hortenſius*. Sowes of the wild kind bring forth pigs but once a yere; and the bores in briming time are exceeding fierce and fel: then they fight one with another, they harden their ſides, rubbing them againſt the bodies of trees, and all to wallow themſelues in the mire, coating their backs with dirt. But they are not ſo raging then, but the ſowes in their farrowing are much worſe, and lightly it is ſo in all other kind of beaſts. Wild bores are not fit for generation before they be a yeare old. The wild bores of India haue two bowing fangs or tuſks of a cubit length, growing out of their mouth, and as many out of their foreheads like to calues horns. The briſtly haire of the wild ſort is like to braſſe: but of others black. In Arabia ſwine will not liue.

CHAP. LIII.

¶ *Of Beaſts halfe ſauage.*

THere is no creature ingenders ſo ſoon with wild of the kind, as doth ſwine: & verily ſuch hogs in old time they called Hybrides, as a man would ſay, halfe wild; inſomuch as this terme by a tranſlation hath bin attributed to mankind. For ſo was *C. Antonius*, collegue with *Cicero* in the Conſulſhip, nicknamed. And not in ſwine onely, but alſo in all other liuing creatures, looke where there be any tame and domeſtical, you may find alſo wild and ſauage of the ſame kind: ſeeing that euen of wild men there be alſo many ſorts in diuers places, as wee haue before ſaid. As for the goats kind, how many & how ſundry reſemblances are to be found in them of other beaſts? for among them you ſhall haue the roe bucke, the ſhamois, the wilde goat called the Eveck, wonderfull ſwift, albeit his head be loden with huge hornes like ſword ſcabberds: by theſe they hang and poiſe themſelues from rockes, namely, when they minde to leap from one to another, for by ſwinging to and fro they skip and jump the more nimbly, and fetch a jerk out to what place they liſt, as it were forth of an engin. Of this kind be the Origes, the only beaſts, as ſome thinke, of all others, that are ſaid to haue their haire growing contrariwiſe and turning toward the head. To theſe belong the Does, and a kinde of fallow Deere called Pygargi, as alſo thoſe that are named Strepſicerotes, and many other not far vnlike. As for the former ſort they come out of the Alps. Theſe laſt rehearſed are ſent from other parts beyond-ſea.

CHAP. LIV.

¶ *Of Apes and Monkies.*

ALl the kinde of theſe Apes approch neereſt of all beaſts to the reſemblance of a mans ſhape: but they differ one from another in the taile. Maruellous crafty and ſubtill they be to beguile themſelues: for by report, as they ſee hunters doe before them, they will imitate them in euery point, euen to beſmeare themſelues with glew & birdlime, & ſhoo their feet within grins and ſnares, and by that means are caught. *Mutianus* ſaith, that he hath ſeene Apes play at cheſſe and table: and that at firſt ſight they could know nuts made of waxe from others. He affirmes alſo, that when the moon is in the wain, the monkies & Marmoſets (which in this kinde haue tailes) are ſad and heauy, but the new moone they adore and ioy at, which they teſtifie by hopping and dancing. As for the eclipſe of Sun or Moone, all other foure footed beaſts alſo do greatly dread and feare. The ſhe Apes of all ſorts are wondrous fond of their little ones: and ſuch as are made tame within houſe will carry them in their armes all about ſo ſoone as they haue brought them into the world, keepe a ſhewing of them to euery bodie, and they take pleaſure to haue them dandled by others, as if thereby they tooke knowledge that folke ioyed for their ſafe deliuerance: but ſuch a culling and hugging of them they keep, that

in the end with very clasping and clipping they kill them many times. Apes that be headed and long snouted like dogs, and thereof called Cynocephali, are of all other most curst, shrewd and vnhappy: like as the Marmozets and Monkies called Sphinges & Satyri, are gentlest and most familiar: as for those called Callitriches, they be clean of another form & shape all ouer in a maner; they haue a beard on their visage, & the forepart of their taile spredeth broad. But this creature is said to liue in no other climat but Æthiopia, where it breedeth.

Chap. LV.

¶ *Of Hares and Connies.*

OF Hares also there be many sorts: vpon the Alps & such high mountains they be white of colour so long as the snow lieth; and it is verily thought, that all Winter long they liue with eating of snow: for surely when it is thawed and melted, all the yere after they be brown and reddish as before: and a creature it is otherwise bred in extreme and intolerable cold. Of the Hares kind are they also which in Spain they call Connies, which are exceeding fruitfull, and of wonderfull increase: insomuch, as hauing deuoured all the corn in the field before harueſt, in the Baleare Islands, they brought thereby a famine vpon the people. There is a most daintie dish serued vp at the table, made of Leuerets or rabbets, either cut out of the dams bellies, or taken from them when they are suckers, without clensing them at all of the garbage, and such the Latines call Laurices. It is know for certain, that the Islanders of Majorca & Minorca made means to the Emperor *Augustus Cæsar*, for a power of soldiers to destroy the infinit increase of Connies among them. Ferrets are in great account for chasing and hunting these Connies: the manner is to put them into their earths, which within the ground haue many waies and holes like mines, and thereupon these creatures are called *Cuniculi*: and when they are within, they so course the poore Connies out of their earth, that they are soon taken aboue ground at the mouth of their holes. *Archelaus* writes, that looke how many receptacles & waies of passage the Hare hath for his dung and excrements, so many yeares old he is iust. And verily some haue more than others. The same writer is of opinion, that euery hare is both male and female, and that any of them can breed without the bucke. Certes herein Nature hath shewed her bounty and goodnesse, in that she hath giuen this creature (so good to eat, and so harmlesse otherwise) the gift of fertilitie and fruitfull wombe. The Hare, naturally exposed to be a prey and game for all men, is the only creature, vnles it be the Connie again called Dasipus, which after it be once with yong, conceiueth again vpon it: insomuch as at one time shee hath some Leuerets sucking of her, others in her belly; and those not of the same forwardnesse, for some of them are couered with haire, others are naked without any downe; and there be againe of them that as yet are not shapen at all, but without all forme. Moreouer, men haue assaied to make cloath of Hares and Connies haire: but in the hand they are not so soft as is the fur vpon the skin or case: neither will they last, by reason that the haire is short and will soon shed.

Chap. LVI.

¶ *Of Beasts halfe tame.*

AS for Hares, seldome be they made tame and to come to hand; and yet iustly they cannot be simply called wild: for many other such creatures there be besides, that neither are sauage, nor tame and gentle, but of a middle nature betwixt both: as namely among flying fowles in the aire, the Swallow: likewise the Bee: and among fishes the Dolphin in the sea.

Chap. LVII.

¶ *Of Mice and Rats, Dormice, Reer-mice, and Bats.*

IN the rank of those that be neither tame nor wild, many haue ranged the Mice and rats that haunt our houses. A creature this is of no smal reckoning for presaging somwhat to a state, by some strange and prodigious tokens. By gnawing the siluer shields & bucklers at Lauinium, they portended and foreshewed the Marsian war. Vnto *Carbo* the L. Generall, by eating of his hose garters and shooe-strings at Clusium they prognosticated his death. Many sorts there

there be of them in the country of Cyrene, some with a broad flat forehead, others with a sharp pointed: and there be of them seen to haue sharp prickles like to vrchins or hedge-hogs. *Theophrastus* reporteth, that these vermin hauing dispeopled the Isle Gyaros, and driuen away the inhabitants, gnawed and deuoured euery thing they could meet withal, euen to their very iron. And surely it seemes that is their nature so to doe: for euen amongst the Chalybes they serue them so, in eating their iron and steele within their very forges: yea, & in gold mines they play the like part: & therefore being caught, their bellies be ript by the pioners in the mine, where they euermore find their stollen gold again. See what delight this creature takes in theeuing. We reade in the Chronicles, that whiles *Annibal* lay in siege before the towne Casilinum, a rat was sold within the town for 200 Sesterces: the man who bought it at that price liued, but the party who sold it through greedines of mony died for hunger. By the learning of Soothsayers obserued it is, that if there be store of white ones bred, it is a good signe and presageth prosperitie. And in truth our stories are full of the like examples, and namely, that if rats be heard to cry or squeak in the time of ceremoniall taking the Auspices and signes of birds, all is marred, and that businesse clean dasht. *Nigidius* saith, that rats lie close hidden all winter, like as Dormice. By the Edicts of the Censors, and principally by an Act of *M. Scaurus* in his Consulship, prouided it was, & streight order taken, that no Rats, Mice, or Dormice should be serued vp to the table at their great suppers and feasts: like as all shell fish or fowle fet out of forrein countries far remote. Counted are Dormice betweene tame and wilde: and verily he that first deuised to keepe wilde bores in parkes, found means also to nourish and feed these creatures in great tuns, pipes, and drifats. In the experiment and triall whereof this hath bin found & obserued, That willingly these little creatures will not sort together vnlesse they were countrimen as it were, and bred in one & the same forrest: and if it chance that there be intermingled among them any strangers, to wit, such as had either some riuer or mountain between the places where they were bred, they kil one another with fighting. The yong Dormice are exceeding kind and louing to their sires that begat them; for when they be old and feeble, full tenderly will they feed and nourish them. They renew their age euery yere by sleeping all winter; for they lie by it close snug all the while, and are not to be seen: but come the sommer once they be yong and fresh againe. And thus the field mice likewise take their rest, and do the same.

Chap. LVIII.

¶ *What Creatures liue not but in certaine places.*

A Wonderfull thing it is to see, that Nature hath not only brought forth diuers creatures in sundrie Countries, but also in one region vnder the same climate hath denied some of them to liue in euery corner thereof. And namely in the forrest of Mœsia in Italie, these Dormice are found but only in one part thereof. And in Lycia, the wild goats, roe-buckes, and Does neuer passe the mountaines that confine vpon the Syrians: no more than the wilde Asses transmount that hil which diuides Cappadocia from Cilicia. Within Hellespont the Stags and Hinds neuer go forth and enter into the marches of other countries: and those about Arginussa passe not the mountaine Elatus: which may be knowne by this, that all vpon that hill haue their eares marked and slit. In the Island Poroselenum the weezels will not crosse ouer the highway. And about Lebadia in Bœotia, those moldwarpes or wants that are brought thither from other parts, will not abide the very soile, but flie from it; which neere-by in Orchomenus, vndermine and hollow all their corn fields: and such store there is of them, that I haue seen all the hangings, carpets, counterpoints, and couerlets of chambers made of their skinnes. See how men for no religion and feare of the gods wil be kept from taking their pleasures and making their delights of these creatures, otherwise prodigious & portending things to come. The strange Hares that be brought into Ithaca will not liue there, but seeking to escape, are found dead vpon the very banks of the sea side. In the Island Ebusus be no Connies at all: and yet in Spain and the Baleare Isles there are so many, that they pester the whole country. Frogs were euer in Cyrenæ naturally mute, and would not cry: but brought there were thither out of the continent such as would crie in the water: and that whole kind still remaineth vocal. In the Island Seriphos you shall not yet heare a Frogge to cry: let the same be carried forth to

other places, they will keep a singing as well as the rest. And (by report) the like hapned in a lake of Thessaly named Sicendus. In Italy the hardy shrews are venomous in their biting: but passe ouer the Apennine once there are no more such to be found. In what country soeuer they be, let them go ouer the tract of a cart wheele they die presently. In Olympus a mountaine of Macedony there are no wolues, ne yet in the Isle of Candy: and there verily are to be found no Foxes nor Beares, and in one word, no hurtfull or noisome beast, vnlesse it be a kinde of spider called *Phalangium*, whereof we will speake more in due time and place. And that which is more wonderfull, in the same Isle there are no stags or hinds, saue only in the region and quarter of the Cydoniates: no wild bores likewise, nor the fowle called the Godwit or Attagene, ne yet Vrchins. To conclude, in Africk ye shall find no wild bores, no Stags and Hinds, no roe-bucks and Does, ne yet Beares.

Chap. LIX.

¶ *What Creatures are hurtfull to strangers.*

NOw, some liuing creatures there be that do no harm at all to the inhabitants of the same countries, but kill all strangers. Namely, certain serpents in Tirinthe, which are supposed to breed of themselues out of the very earth. Semblably, in Syria there be snakes, and specially along the banks of Euphrates, that will not touch the Sirians lying along asleep: nay, if a man that leans vpon them be stung or bitten by them, he shal find no hurt or mischief thereby. But to men of all other nations whatsoeuer they are most spightfully bent, them they will with great greedinesse eagerly assaile and fly vpon, yea, and kill them with extreme paine and anguish: and therefore it is that the Sirians destroy them not. Contrariwise *Aristotle* reporteth, That in Latmos (a mountain in Caria) the Scorpions will do no harm to strangers, marie the inhabitants of the same country they will sting to death. Now let vs proceed to other liuing creatures besides those of the land, and discourse of their sundry sorts and kinds.

THE NINTH BOOKE OF THE HISTORIE OF NATVRE,

WRITTEN BY C. PLINIVS SECVNDVS.

Chap. I.

¶ *The nature of water Creatures.*

I Haue thus shewed the nature of those beasts that liue vpon the land, and therein haue some societie & fellowship with men. And considering, that of all others behaue some societie & fellowship with men. And considering, that of all others besides in the world, they that flie be the least, we will first treat of those fish that keep in the sea, not forgetting those also either in running fresh riuers or standing lakes.

Chap. II.

¶ *What the reason is why the sea should breed the greatest liuing creatures.*

THe waters bring forth more store of liuing creatures, and the same greater than the land. The cause wherof is euident, euen the excessiue abundance of moisture. As for the fouls & birds, who liue hanging, as it were, & houering in the aire, their case is otherwise. Now in

in the sea, being so wide, so large and open, readie to receiue from heauen aboue the genitall seeds and causes of generation, being so soft and pliable, so proper & fit to yeeld nourishment and encrease, assisted also by Nature, which is neuer idle, but alwaies framing one new creature or other: no maruell it is if there are found so many strange and monstrous things as there be. For the seeds and vniuersall elements of the world are so interlaced sundry waies, and mingled one within another, partly by the blowing of the winds, and partly with the rolling and agation of the waues, insomuch as it may truly be said, according to the vulgar opinion, that whatsoeuer is engendred and bred in any part of the world besides, is to be found in the sea: and many more things in it, which no where else are to be seen. For there shall ye meet with fishes, resembling not onely the forme and shape of land creatures liuing, but also the figure and fashion of many things without life: there may one see bunches of grapes, swords, and sawes, represented; yea, and also cowcumbers, which for colour, smell, and taste, resembleth those growing vpon the earth. And therefore we need the lesse to wonder, if in so little shell fishes as are cockles, there be somewhat standing out like horse-heads.

Chap. III.

¶ *Of the monstrous fishes in the Indian sea.*

THe Indian sea breedeth the most and biggest fishes that are: among which, the Whales and Whirlepooles called Balænæ, take vp in length as much as foure acres or arpens of land: likewise the Pristes are two hundred cubits long: and no maruell, since Locusts are there to be found of foure cubits in length: and yeeles within the riuer Ganges of thirtie foot in length. But these monstrous fishes in the sea, are most to be seen about the middest of Summer, & when the daies be at the longest with vs. For then by the means of whirlewinds, storms, winds, and blustering tempests which come with violence down from the mountains and promontories, the seas are troubled from the very bottome, and turned vpside downe: whereupon the surging billowes thereof, raise these monsters out of the deep, and roll them vp to be seen. For in that manner so great a multitude of Tunnies were discouered and arose, that the whole armada of king *Alexander* the great, seeing them comming like to an armie of enemies in order of battell, was driuen to range & make head against them, close vnited together: for otherwise, if they had sailed scattering asunder, there had bin no way to escape, but ouerturned they had bin, with such a force and sway came these Tunnies in a skull vpon them. And verily, no voice, crie, hollaing and houting, no nor any blowes and raps affrighted this kind of fish, only at some cracke or crashing noise they be terrified: and neuer are they troubled and disquieted so much as when they perceiue some huge thing ready to fall vpon them.

In the red sea there lies a great demie Island named Cadara, so farre out into the sea, that it maketh a huge gulfe vnder the wind, which king *Ptolomæus* was 12 daies and 12 nights a rowing through: forasmuch as there is no wind at all vses to blow there. In this creeke so close and quiet, there be fish and Whales grow to that bignes, that for their very weight and vnweldines of their bodie, they are not able to stirre. The Admirals and other captaines of the fleet of the foresaid *Alexander* the great, made report, That the Gedrosi, a people dwelling vpon the riuer Arbis, vse to make of such fishes chawes, the dores of their houses; also that they lay their bones ouerthwart from one side of the house to another, in stead of beames, joists and rafters to beare vp their floores and roufes: and that some of them were found to be fortie cubits long.

In those parts there be found in the sea certaine strange beasts like sheep, which goe forth to land, feed vpon the roots of plants and herbes, and then returne againe into the sea. Others also which are headed like Horses, Asses, and Buls: and those many times eat downe the standing corne vpon the ground.

Chap. IIII.

¶ *Which be the greatest fishes in any coast of the Ocean sea.*

THe biggest and most monstrous creature in the Indish Ocean, are the whales called Pristis & Balæna. In the French Ocean there is discouered a mighty fish called Physeter, [*i.* a Whirlepoole] rising vp aloft out of the sea in manner of a columne or pillar, higher than the

the very sailes of the ships: and then he spouteth and casteth forth a mightie deale of water, as it were out of a conduit, enough to drowne and sinke a ship. In the Ocean of Gades, betweene Portugale and Andalusia, there is a monstrous fish to be seen like a mightie great tree, spreading abroad with so mightie armes, that in regard thereof onely, it is thought verily it neuer entred into the streights or narrow sea there by of Gibraltar. There shew themselues otherwhiles fishes made like two great wheeles, and thereupon so they be called: framed distinctly with foure armes, representing as many spokes: and with their eies they seem to couer close the naues from one side to the other, wherein the said spokes are fastened.

Chap. V.

¶ *Of Tritons, Nereides, and sea-Elephants, and their formes.*

IN the time that *Tiberius* was Emperour, there came vnto him an Embassador from *Vlisipon*, sent of purpose to make relation, That vpon their sea-coast there was discouered within a certain hole, a certain sea goblin, called Triton, sounding a shell like a trumpet or cornet: and that he was in forme and shape like those that are commonly painted for Tritons. And as for the Meremaids called Nereides, it is no fabulous tale that goes of them: for look how painters draw them, so they are indeed: onely their bodie is rough & skaled all ouer, euen in those parts wherein they resemble a woman. For such a Meremaid was seen and beheld plainly vpon the same coast neere to the shore: and the inhabitants dwelling neere, heard it a far off when it was a dying, to make pitteous mone, crying & chattering very heauily. Moreouer, a lieutenant or gouernor vnder *Augustus Cæsar* in Gaule, aduertised him by his letters, That many of these Nereides or Mearmaids were seen cast vpon the sands, and lying dead. I am able to bring forth for mine authors diuers knights of Rome, right worshipfull persons and of good credit, who testifie, that in the coast of the Spanish Ocean neer vnto Gades, they haue seen a Mere-man, in euery respect resembling a man as perfectly in all parts of the bodie as might be. And they report moreouer, that in the night season he would come out of the sea abord their ships: but look vpon what part soeuer he setled, he waied the same downe, & if he rested and continued there any long time, he would sinke it cleane. In the daies of *Tiberius* the Emperor, in a certain Island vpon the coast of the prouince of Lions, the sea after an ebbe left vpon the bare sands 300 sea-monsters and aboue, at one flote together, of a wonderfull varietie and bigneſſe, differing asunder. And there were no fewer found vpon the coast of the Santones. And among the rest there were sea-Elephants and rams, with teeth standing out; & hornes also, like to those of the land, but that they were white like as the fore-said teeth: ouer & besides, many Meremaids. *Turanius* hath reported, That a monster was driuen and cast vpon the coast of Gades, betweene the two hindmost fins whereof in the taile, were 16 cubits: it had 122 teeth, whereof the biggest were a span or nine inches in measure, and the least halfe a foot. *M. Scaurus* among other strange and wonderfull sights that he exhibited to the people of Rome, to doe them pearure in his Ædile-ship, shewed openly the bones of that sea-monster, before which ladie *Andromeda* (by report) was cast to be deuoured: which were brought to Rome from Ioppe, a towne in Iudæa: and they caried in length fortie foot: deeper were the ribs than any Indian Elephant is high, and the ridge-bone a foot and halfe thicke.

Chap. VI.

¶ *Of the Balænes and Orcæ.*

THese monstrous Whales named Balænæ, otherwhiles come into our seas also. They say that in the coast of the Spanish Ocean by Gades, they are not seen before midwinter when the daies be shortest: for at their set times they lie close in a certain calme deep and large creeke, which they chuse to cast their spawn in, and their delight aboue all places to breed. The Orcæ, other monstrous fishes, know this full well, and deadly enemies they be vnto the foresaid whales. And verily, if I should pourtrait them, I can resemble them to nothing else but a mightie masse and lumpe of flesh without all fashion, armed with most terrible, sharpe, and cutting teeth. Well, these being ware that the Whales are there, breake into this secret by-creek out of the way, seeke them out, and if they meet either with the youug ones, or the dammes that haue newly

newly spawn'd, or yet great with spawn, they all to cut & hack them with their trenchant teeth: yea, they run against them as it were a foist or ship of warre armed with sharp brazen pikes in the beake-head. But contrariwise, the Balænes or Whales aforesaid, that cannot wind and turne aside for defence, and much lesse make head and resist, so vnweldie as they bee by reason of their owne weightie and heauie bodie, (and as then either big bellied, or else weakened lately with the paines of trauell and caluing their young ones) haue no other meanes of helpe and succor but to shoot into the deepe, and gaine sea-roome to defend themselues from the enemie. On the other side, the Orcæ labour (to cut them short of their purpose) to lie betweene them and home in their very way, and otherwhiles kill them vnawares in the streights, or driue them vpon the shelues and shallows, or else force them against the very rocks, & so bruise them. When these combats and fights are seen, the sea seemes as if it were angry with it selfe: for albeit no winds are vp, but all calme in that creek and gulfe, yet ye shall haue waues in that place where they encounter (with the blasts of their breath, and the blowes giuen by the assailant) so great, as no tempestuous whirle windes whatsoeuer are able to raise. In the hauen of Ostia likewise there was discouered one of these Orcæs, and the same assailed by *Claudius* the Emperour. It chanced to come as he was making the said harbour or pere, drawne and trained thither with the sweetnes of certaine beasts hides that were brought out of Gaule, and were cast away and perished by the way. Of them for certaine daies she had fed, and still following them, with the weight of her heauie bodie had made a furrow and channel (as it were) with her bellie in the bottome among the shelues: and by reason of the flowing of the sea she was so inuested and compassed in with the sands, that by no means possible she could turn about: but stil while she goes after these hides w'. ereof she fed, she was by the billows of the sea cast aflote on the shore, so as her back was to be seene a great deale aboue the water, much like to the bottome or keele of a ship turned vpside downe. Then the Emperour commanded to draw great nets and cords with many folds along the mouth of the hauen on euery side behind the fish, himselfe accompanied with certaine Pretorian cohorts, for to shew a pleasant sight vnto the people of Rome, came against this monstrous fish, and out of many hoies and barks the souldiers launced darts and iauelines thicke. And one of them I saw my selfe sunke downe right with the abundance of water that this monstrous fish spouted and filled it withall. The Whales called Balenæ haue a certaine mouth or great hole in their forehead, and therefore as they swim aflote aloft on the water, they send vp on high (as it were) with a mightie strong breath a great quantity of water when they list, like stormes of raine.

Chap. VII.

¶ *Whether fish do breath and sleep, or no.*

ALl writers are fully resolued in this, That the Whales aboue said, as well the Balænæ as the Orcæ, and some few other fishes bred & nourished in the sea, which among other inward bowels haue lights, doe breath. For otherwise it were not possible, that either they or any other beast, without lights or lungs should blow: and they that be of this opinion, suppose likewise, that no fishes hauing guils, do draw in and deliuer their wind again to and fro: nor many other kinds besides, although they want the foresaid gils. Among others, I see that *Aristotle* was of that mind, and by many profound and learned reasons perswaded & induced many more to hold the same. For mine owne part, if I should speake frankely what I think, I professe that I am not of their judgment. For why? Nature if she be so disposed, may giue in steed of light some other organs and instruments of breath: to this creature one, to that another: like as many other creatures haue another kind of moist humor in lieu of blood. And who would maruel, that this vitall spirit should pierce within the waters, considering that he seeth euidently how it riseth againe and is deliuered from thence: also how the aire entreth euen into the earth, which is the groseſt & hardeſt of al the elements? As we may perceiue by this good argument, that some creatures, which albeit they be alwaies couered within the ground, yet liue and breath neuertheleſſe, and namely, the Wants or Mold-warpes. Moreouer, I haue diuers pregnant & effectuall reasons inducing me to beleeue, that all water creatures breathe each one after their maner, as Nature hath ordained. First and principally, I haue obserued oftentimes by experience, That fishes evidently breath and pant for wind (after a sort) in the great heat of Summer: as also that they

they yawne and gape when the weather is calme & the sea still. And they themselues also who G
hold the contrarie, confesse plainly, that fishes doe sleepe. And if that be true, How, I pray you,
can they sleep if they take not their wind? Moreouer, whence come those bubbles which con-
tinually are breathed forth from vnder the water? and what shall we say to those shell fishes
which wax and decay in substance of bodie, according to the effect of the Moones encrease or
decrease? But aboue all, fishes haue hearing and smelling, and no doubt both these senses are
performed and maintained by the benefit and matter of the aire: for what is smell and sent, but
the verie aire, either infected with a bad, or perfumed with a good sauour? Howbeit I leaue eue-
ry man free to his own opinion, as touching these points. But to returne againe to our purpose:
this is certaine, that neither the Whales called Balænæ, nor the Dolphins, haue any guills: and
yet do both these fishes breathe at certaine pipes and conduits, as it were reaching downe into H
their lights: from the forehead, in the Balænes; and in the Dolphins, from the backe. Further-
more, the Sea-calues or Seales, which the Latines call *Phocæ*, doe both breath and sleepe vpon
the drie land. So do the sea Tortoises also, whereof we will write more anon.

Chap. VIII.

¶ *Of Dolphins.*

THe swiftest of al other liuing creatures whatsoeuer, & not of sea-fish only, is the Dolphin;
quicker than the flying fowle, swifter than the arrow shot out of a bow. And but that this
fish is mouthed far beneath his snout, and in manner towards the mids of his belly, there I
were not a fish could escape from him, so light and nimble he is. But nature in great prouidence
fore-seeing so much, hath giuen these fishes some let & hinderance, for vnlesse they turned vp-
right much vpon their backe, catch they can no other fish: and euen therein appeareth most of
all their wonderfull swiftnesse and agilitie. For when the Dolphins are driuen for very hunger
to course and pursue other fishes down into the bottom of the sea, and therby are forced a long
while to hold their breath, for to take their wind again, they lance themselues aloft from vnder
the water as if they were shot out of a bow; and with such a force they spring vp again, that ma-
ny times they mount ouer the very sailes and maستes of ships. This is to be noted in them, that
for the most part they sort themselues by couples like man and wife. They are with yong nine
moneths, and in the tenth bring forth their little ones, and lightly in Summer time; and other- K
whiles they haue two little dolphins at once. They suckle them at their teats, like as the whales
or the Balænes do: yea, & so long as their little ones are so yong that they be feeble, they carry
them too and fro about them: nay when they are growne to be good big ones, yet they beare
them companie still a long time, so kind and louing be they to their young. Young Dolphins
come very speedily to their growth, for in ten yeres they are thought to haue their full bignes:
but they liue thirtie yeres, as hath bin known by the experience and triall in many of them, that
had their taile cut for a marke when they were yong, and let go again. They lie close euery yere
for the space of thirty daies, about the rising of the Dog-starre; but it is strange how they be
hidden, for no man knowes how: and in very deed a wonder it were, if they could not breath vn-
der the water. Their manner is, to breake forth of the sea and come aland, and why they should L
so do, it is not known: for presently assoon as they touch the dry ground, they die: and so much
the sooner, for that their pipe or conduit aboue-said incontinently closeth vp and is stopped.
Their tongue is irreth within their heads, contrary to the nature of all other creatures liuing in
the waters: the same is short and broad fashioned like vnto that of a swine. Their voice resem-
bleth the pittifull groning of a man: they are saddle-backed, & their snout is camoise and flat,
turning vp. And this is the cause that all of them (after a wonderfull sort) know the name *Simo*,
and take great pleasure that men should so call them. The Dolphin is a creature that carries a
louing affection not only vnto man, but also to musicke: delighted he is with harmony in song,
but especially with the sound of the water instrument, or such kind of pipes. Of a man he is no-
thing affraid, neither auoides from him as a stranger: but of himselfe meeteth their ships, plai- M
eth and disportes himselfe, and fetcheth a thousand friskes and gamboles before them. He will
swim a'long by the mariners, as it were for a wager, who should make way most speedily, and
alwaies outgoeth them, faile they with neuer so good a fore-wind.

In the daies of *Augustus Cæsar* the Emperour, there was a Dolphin entred the gulfe or poole Lucrinus,

A Lucrinus, which loued wondrous well a certain boy a poore mans son: who vsing to goe euery
day to schoole from Baianum to Puteoli, was woont also about noone-tide to stay at the water
side, and to call vnto the Dolphin, *Simo, Simo*, and many times would giue him fragments of
bread, which of purpose he euer brought with him, and by this meanes allured the Dolphin to
come ordinarily vnto him at his call. [I would make scruple and bash to insert this tale in my
storie and to tell it out, but that *Mecenas Fabianus, Flauius Alfius*, and many others haue set it
downe for a truth in their chronicles.] Well in processe of time, at what houre soeuer of the
day, this boy lured for him & called *Simo*, were the Dolphin neuer so close hidden in any secret
and blind corner, out he would and come abroad, yea and skud amaine to this lad: and taking
bread and other victuals at his hand, would gently offer him his back to mount vpon, and then
downe went the sharpe pointed prickles of his fins, which he would put vp as it were within a
B sheath for fear of hurting the boy. Thus when he had him once on his back, he would carry him
ouer the broad arme of the sea as farre as Puteoli to schoole; and in like manner conuey him
backe again home: and thus he continued for many yeeres together, so long as the child liued.
But when the boy was fallen sicke & dead, yet the Dolphin gaue not ouer his haunt, but dayly
came to the wonted place, & missing the lad, seemed to be heauie and mourne againe, vntill for
very griefe & sorrow (as it is doubtles to be presumed) he also was found dead vpon the shore.

Another Dolphin there was not many yeeres since vpon the coast of Affricke, neere to the
citie Hippo, called also Diarrhytus, which in like manner would take meat at a mans hand, suf-
fer himselfe gently to be handled, play with them that swom and bathed in the sea, and carrie
C on his backe whosoeuer would get vpon it. Now it fell out so, that *Flauianus* the Proconsull or
lieutenant Generall in Affrick vnder the Romans, perfumed and besmeered this Dolphin vpon
a time with a sweet ointment: but the fish (as it should seem) smelling this new & strange smel
fell to be drowsie and sleepie, and hulled to and fro with the waues, as if it had bin halfe dead:
and as though some iniurie had bin offered vnto him, went his way and kept aloufe, and would
not conuerse any more for certaine moneths with men, as before-time. Howbeit in the end he
came again to Hippo, to the great wonder & astonishment of all that saw him. But the wrongs
that some great persons and lords did vnto the citizens of Hippo, such I mean as vsed to come
for to see this sight: and namely, the hard measure offered to those townesmen, who to their
great cost gaue them entertainement, caused the men of Hippo to kill the poore Dolphin.

D The like is reported in the citie Iassos, long before this time: for there was seene a Dolphin
many a day to affect a certaine boy, so as he would come vnto him whersoeuer he chanced to
espy him. But whiles at one time aboue the rest he followed egerly after the lad going toward
the towne, he shot himselfe vpon the dry sands before he was aware, and died forthwith. In re-
gard hereof, *Alexander* the Great ordained that the said young boy should afterwards be the
chiefe priest and sacrificer to Neptune in Babylon: collecting by the singular fancie that this
Dolphin cast vnto him, That it was a great signe of the speciall loue of that god of the sea vn-
to him, and that he would be good and gracious to men for his sake.

Egesidemus writeth, that in the same Iassus there was another boy named *Hermias*, who hauing
vsed likewise to ride vpon a Dolphin ouer the sea, chanced at the last in a sodaine storme to be
E ouer-whelmed with waues as he sat vpon his backe, and so died, and was brought backe dead
by the Dolphin: who confessing as it were that he was the cause of his death, would neuer retire
againe into the sea, but launced himselfe vpon the sands, and there died on the drie land.

The semblable happened at Naupactum, by the report of *Theophrastus*. But there is no end of
examples in this kinde: for the Amphilochians and Tarentines testifie as much, as touching
Dolphins which haue bin enamoured of little boies: which induceth me the rather to beleeue
the tale that goes of *Arion*. This *Arion* being a notable musition & plaier of the harpe, chanced
to fall into the hands of certain mariners in the ship where he was, who supposing that he had
good store of mony about him, which he had gotten with his instrument, were in hand to kill
him and cast him ouer boord for the said monie, and so to intercept all his gaines: he, seeing
F himselfe at their deuotion and mercie, besought them in the best manner that he could deuise,
to suffer him yet before he died, to play one fit of mirth with his harpe; which they granted:
(at his musicke and sound of harpe, a number of Dolphins came flocking about him:) which
done, they turned him ouer shipbord into the sea; where one of the Dolphins tooke him vpon
his backe, and carried him safe to the bay of Tænarus.

To

To conclude and knit vp this matter: In Languedoc within the prouince of Narbon, and in G
the territorie of Næmauſium, there is a ſtanding poole or dead water called Laterra, wherein
men and Dolphins together, vſe to fiſh: for at one certain time of the yeare, an infinite number
of fiſhes called Mullets, taking the vantage of the tide when the water doth ebbe, at certain nar-
row weares and paſſages with great force break forth of the ſaid poole into the ſea: and by rea-
ſon of that violence, no nets can be ſet and pitched againſt them ſtrong enough to abide and
beare their huge weight, and the ſtreame of the water rogether, if ſo be men were not cunning
and craftie to wait and eſpie their time to lay for them, and to entrap them. In like manner the
Mullets for their part, immediately make ſpeed to recouer the deepe, which they do very ſoon
by reaſon that the channell is neere at hand: and their onely haſt is for this, to eſcape and paſſe
that narrow place which affordeth opportunitie to the fiſhers to ſtretch out and ſpread their H
nets. The fiſher-men being ware thereof, and all the people beſides (for the multitude knowing
when fiſhing time is come, run thither, and the rather for to ſee the pleaſant ſport) crie as lowd
as euer they can to the Dolphins for aid, & call *Simo, Simo*, to help to make an end of this their
game and paſtime of fiſhing. The Dolphins ſoon get the eare of their crie, and know what they
would haue; and the better, if the North-winds blow and carrie the ſound vnto them: for if it be
a Southerne wind, it is later ere the voice be heard, becauſe it is againſt them. Howbeit, be the
wind in what corner ſoeuer, the Dolphins reſort thither flock-meale, ſooner than a man would
thinke, for to aſſiſt them in their fiſhing. And a wondrous pleaſant ſight it is to behold the
ſquadrons as it were of thoſe Dolphins, how quickly they take their places and be arainged in
battell array euen againſt the very mouth of the ſaid poole, where the Mullets vſe to ſhoot in- I
to the ſea: to ſee (I ſay) how from the ſea, they oppoſe themſelues and fight againſt them; and
driue the Mullets (once affrighted and skared) from the deep, vpon the ſhelues. Then come the
fiſhers and beſet them with net and toile, which they beare vp and fortifie with ſtrong forkes:
howbeit for all that, the Mullets are ſo quicke & nimble, that a number of them whip ouer, get
away, and eſcape the nets. But the Dolphins then are readie to receiue them: who contenting
themſelues for the preſent to kill only, make foule worke and hauocke among them; & put off
the time of preying and feeding vpon, vntil they haue ended the battel & atchieued the victo-
rie. And now the skirmiſh is hot, for the Dolphins alſo perceiuing alſo the men at worke, are
the more egre and couragious in fight, taking pleaſure to be encloſed within the nets, and ſo
moſt valiantly charge vpon the Mullets: but for feare leſt the ſame ſhould giue an occaſion K
vnto the enemies & prouoke them to retire and flie backe; between the boats, the nets, and the
men there ſwimming, they glide by ſo gently and eaſily, that it cannot be ſeen where they gat
out. And albeit they take great delight in leaping, & haue the caſt of it, yet none aſſai :th to
get forth, but where the nets lie vnder them: but no ſooner are they out, but preſently a man
ſhall ſee braue paſtime between them, as they ſcuffle & skirmiſh as it were vnder the rampier.
And ſo the conflict being ended, and all the fiſhing ſport done, the Dolphins fal to ſpoile and
eat thoſe which they killed in the firſt ſhock and encounter. But after this ſeruice performed,
the Dolphins retire not preſently into the deep againe, from whence they were called, but ſtay
vntil the morrow, as if they knew very well that they had ſo carried themſelues, as that they de- L
ſerued a better reward than one daies refection and victuals: and therefore contented they are
not and ſatisfied, vnleſſe to their fiſh they haue ſome ſops and crums of bread giuen them ſoa-
ked in wine, & that their bellies ful. *Mutianus* makes mention of the ſemblable maner of fiſhing
in the gulfe of Iaſſos: but herein is the difference, for that the Dolphins come of their own ac-
cord without calling, take their part of the bootie at the fiſhers hands: and euery boat hath a
Dolphin attending vpon it as a companion, although it be in the night ſeaſon & at torch light
Ouer and beſides, the Dolphins haue a kind of common-wealth and publick ſociety among
themſelues: for it chanced vpon a time, that a king of Caria had taken a Dolphin, and kept him
faſt as a priſoner within the harbor: whereupon a mighty multitude of other Dolphins reſorted
thither, and by certain ſignes of ſorrow and mourning that they made, euident to be perceiued
and vnderſtood, ſeemed to craue pardon and mercie for the priſoner: and neuer gaue ouer vntill M
the king had giuen commandement that he ſhould be enlarged and let goe. Alſo the little
ones are euermore accompanied with ſome one of the bigger ſort, as a guide to guard & keep
him. To conclude, they haue beene ſeene to carry one of their fellowes when he is dead, into
ſome place of ſecuritie, that he ſhould not be deuoured and torne of other ſea-monſters.

CHAP.

A

CHAP. IX.

¶ *Of Porpuiſſes.*

THe Porpuiſſes, which the Latines cal *Turſiones*, are made like the Dolphins: howbeit they
differ, in that they haue a more ſad and heauie countenance: for they are nothing ſo
gameſome, play full, and wanton, as be the Dolphins: but eſpecially they are ſnouted like
dogges when they ſnarle, grin, and are readie to doe a ſhewd turne.

CHAP. X.

B

¶ *Of ſea Tortoiſes, and how they are taken.*

THere be found Tortoiſes in the Indian ſea ſo great, that one only ſhel of them is ſufficient
for the rouſe of a dwelling houſe. And among the Iſlands principally in the red ſea, they
vſe Tortoiſe ſhells ordinarily for boats and wherries vpon the water.

Many waies the fiſher-men haue to catch them; but eſpecially in this manner: They vſe in
the mornings when the weather is calm and ſtill, to flote aloft vpon the water, with their backs
to be ſeen all ouer: and then they take ſuch pleaſure in breathing freely & at libertie, that they
forget themſelues altogether: inſomuch as their ſhell in this time is ſo hardened and baked
with the ſun, that when they would they cannot diue and ſinke vnder the water againe, but are
C forced againſt their wills to flote aboue, and by that meanes are expoſed as a prey vnto the fi-
ſhermen. Some ſay that they go forth in the night to land for to feed, where, with eating gree-
dily, they qe wearie; ſo that in the morning, when they are returned again, they fall ſoon aſleep
aboue the water, and keepe ſuch a ſnorting and routing in their ſleepe, that they bewray where
they be, and ſo are eaſily taken: and yet there muſt be three men about euery one of them: and
when they haue ſwom vnto the Tortoiſe, two of them turne him vpon his backe, the third caſts
a cord or halter about him, as hee lyeth with his belly vpward, and then is he haled by many
more together, to the land. In the Phœnician ſea, they make no great ado to take them; for why,
at a certaine time of the yeere they reſort of themſelues by great multitudes in skulls vp into
the riuer Eleutherius.

D The Tortoiſe hath no teeth, but the ſides and brimmes of his neb or becke, are ſharpe and
keene: whereof the vpper part or claw ſhutteth cloſe vpon the nether, like to the lid of a boxe.
In the ſea they liue of muſcles, cockles, and ſuch ſmall ſhell-fiſhes, for their mouths are ſo hard
that they be able to cruſh and break ſtones therewith. Their manner is to goe aland, where a-
mong the graſſe they lay egges as bigge as birds egs, to the number commonly of a hundred.
When they haue ſo done, they hide them within the earth in ſome little hole or gutter, ſure
enough from any place where the water commeth, they couer them with mould, beat it hard
downe with their breſt, and ſo pat it ſmooth, and in the night time ſit vpon them: they
couvie a whole yeare before they hatch. Some ſay, that the looking wiſtly vpon their egs with
their eies ſerueth in ſtead of ſitting. The female flieth from the male, and will not abide to en-
E gender, vntill ſuch time as he pricke her behind and ſticke ſomewhat in her taile for running
away from him ſo faſt.

The Troglodites haue among them certaine Tortoiſes, with broad hornes like the pegs in
a Lute or Harpe, and the ſame will wagge and ſtirre ſo, as in ſwimming they helpe themſelues
therewith, and are guided and directed by them. And this kind of Tortoiſe is called Celtium:
of exceeding great bigneſſe, but rare to be found, and hard to come by: for their exceeding
ſharpe prickes like rockes, among which they keepe, fright the Chelonophagi (who delight to
feed vpon them) that they dare not ſearch after them. And the Troglodites, vnto whom theſe
Tortoiſes vſe to ſwim, adore them as holy and ſacred things.

There be alſo land Tortoiſes (called thereupon in the workes that are made of them in pan-
F nell wiſe, Cherſinæ) found in the deſerts and wilderneſſe of Affrick, and principally in that
part which is drie and full of ſands: and they are thought to liue on nothing elſe but the moiſt
dew. And in very truth, no other liuing creature there breedeth beſides them.

Chap. XI.

¶ *Who first deuised the cleauing of Tortoise shells into thin plates like pannell.*

THe first man that inuented the cutting of Tortoise shells into thin plates, therewith to seele beds, tables, cupbords, and presses, was *Carbilius Pollio*, a man very ingenious and inuentiue of of such toies, seruing to riot and superfluous expense.

Chap. XII.

¶ *A diuision of water beasts into their seuerall kindes.*

THe creatures that breed and liue in the water, be not all couered and clad alike: for some haue a skin ouer them, and the same hairie, as the Seales and Water horses. Others haue but a bare skin, as the Dolphins. There be again that haue a shell like a barke, as the Tortoises: and in others, the shell is as hard as the flint, and such be the oysters, muscles, cockles, and winkles. Some be couered ouer with crusts or hard pills, as the locusts: others haue besides them, sharpe prickles, as the vrchins. Some be scaled, as fishes: others are rough coated, as the Soles, and with their skins folke vse to polish and smooth wood and yuorie. Some haue a tender and soft skin, as Lampreys: others none at all, as the Pourcuttle or Pourcontrell.

Chap. XIII.

¶ *Of the Sea-calfe, or Seale.*

THe great Whales, called Pristis and Balæna, bring forth their young aliue, and perfect liuing creatures: likewise all those that are couered with haire, as the Sea-calfe or Seale. She calueth on the drie land as other cattell, and whensoeuer she calues, she gleans afterwards as kine do. The female is tied and lined to the male, like as bitches to dogges: she neuer bringeth more than two at once; and she giueth milke at her dugs and paps, to her young. Shee bringeth them to the sea not before they be twelue daies old, and then she traines and acquainteth them to swim and keepe the water ordinarily. These Seales be hardly killed, vnlesse a man dash out their braines. In their sleepe, they seeme to low or blea, and thereupon they be called Sea-calues. Docible they be & apt to learn what soeuer is taught them. They will salute folke with a kind of countenance and regard: also with a voice such as it is, resembling a certain rude and rumbling noise. If a man cal them by their name, they wil turn again, and in their language answere. There is no liuing creature sleepeth more soundly than they. The fins which they vse to swim withall in the sea, serue their turnes in stead of feet to go vpon, when they be on land. Their skins, after they be flaied from their bodies, retaine still a proprietie and nature of the seas; for euer as the water doth ebbe, they are more rugged, and the haires or bristles stand vp. Moreouer, their right finnes or legs are thought to haue a power and vertue to prouoke sleep, if they be laid vnder ones beds head.

Chap. XIIII.

¶ *Of fishes that be without haire, how they breed, and how many, sorts there be of them.*

OF such creatures as want haire, two only there be that bring forth their young with life: and namely, the Dolphin and the Viper. Of fishes, properly so called, there be 74 kinds: besides those that haue rough crustie skins, which I count not; wherof there be 30 sorts. Of euery one of them in particular, we will speake else-where, and at another time: for now we are to treat of the natures of the chiefe and principall.

Chap. XV.

¶ *Of the names and natures of many fishes.*

THe Tunies are exceeding great fishes: we haue seene some of them to weigh 15 talents. and the taile to be 2 cubits broad and a span. In some fresh riuers also, there be fish found full

full as bigge: and namely, the riuer-Whale called Silurus, in Nilus; the Lax, in the Rhene; the Attilus, in the Po. This fish growes so fat with ease & lying still, that otherwhiles it weigheth 1000 pounds, and being taken with a great hooke fastened and linked to a chaine, cannot be drawne forth of the riuer but with certaine yokes of oxen. And yet as big as he is, there is one little fish in comparison of him called Clupea, that killeth him: for vpon a maruellous desire that he hath to a certain vein that he hath within his iawes, he bites it in sunder with his teeth, and so dispatcheth the forenamed great fish Attilus.

As for the Silurus, a cut-throat he is where soeuer he goeth, a great deuourer, and maketh foule worke: for no liuing creatures come amisse vnto him; he setteth vp all indifferently. The very horses oftentimes as they swim, he deuoures, and specially in Mœnus, a riuer of Germany neere to Lisboa or Erlisbornis.

Moreouer, in the riuer Donow, there is taken the Mario, a fish much like to a ruffe or Porpuis. Also in the riuer Borysthenes, there is found a fish by report, exceeding great, with no chine nor bone at all betweene; and yet the meat thereof is passing sweet and pleasant.

Within Ganges a riuer of India, there be fishes snouted and tailed as Dolphins, 15 cubits long, which they call Platanistæ. And *Statius Sebosus* reports as strange a thing besides, namely, that in the said riuer there be certain wormes or serpents with two finnes of a side, sixtie cubits long, of color blew, and of that hew take their name [and be called Cyonoeides.] He saith moreouer, that they be so strong, that when the Elephants come into the riuer for drinke, they catch fast hold with their teeth by their trunks or muzzles, and mauger their hearts force them downe vnder the water; of such power and force they are.

The male Tunies haue no finnes vnder their bellies. In the spring time they goe out of the great [Mediterranean] sea, and by whole flotes and troupes enter into Pontus; for in no other sea doe they bring forth their young. Their young frie, which accompanie their dams (when they are lightened of their burden) into the sea againe in the autumne, are called Cordylæ. Afterwards, they begin to call them Pelamides, and in Latine *Limosæ*, of the mud wherein they are kept: and when they be aboue one yere old, then they be Tunies indeed, & so called. These Tunies are cut into pieces, whereof the nape of the necke, the belly, and the flesh about the canell bone of the throat, are most commendable for meat, but these parcels only when they be fresh and new killed, and yet then will they rise in a mans stomacke, and make him belch sower. The other parts being full of good meat and oleous withall, are laid in salt, and so put vp in barrels and kept. And these pieces of the Tunie thus conduit and powdred, are called Melandrya, cut in slices like to oke shingles for all the world. The worst pieces of all others, be those that are next the taile, because they are not fat: but the best is that which is toward the throat: how soeuer in other fishes the taile-peece is in greatest request, as being most stirred & exercised. As for the yong Tunies called Pelamides, they are diuided & cut into parcels, that be named Apolecti: but when they be cut peece-meale into certain squares, those pieces are named Cybia.

All kind of fishes grow exceeding soon to their bignesse, and especially in the sea Pontus: the reason is, because a number of riuers bring fresh water into it, & in some fort make it sweet: and namely in it, there is one called Amia, which grows so fast & so euidently, that a man may perceiue how it waxeth from day to day. These fishes, together with the old Tunies and the young, called Pelamides, enter into great flotes & skuls into the sea Pontus, for the sweet food that they there find: and euery companie of them hath their seuerall leaders and captaines: and before them al, the Maquerels lead the way; which, while they be in the water, haue a colour of brimstone, but without, like they be to the rest. The Maquerels serue the market well in Spaine, and furnish the fish shambles: namely, when as the Tunies repaire not into their seas. As for the sea Pontus, there enter into it few or no rauenours that haunt and deuoure fishes, vnlesse it be the Seales & little Dolphins. The old Tunies, when they come into it, chuse the right side (vpon the coast of Asia) but go forth at the left. And this is the reason therof, as it is thought, For that they see better with their right eie; & yet the sight of either of them is very good. Within the channell of the Thracian Bosphorus, by which Propontis ioyneth to the sea Euxinus, in the very streight of the Firth that diuides Asia from Europe, neer to Chalcedon vpon the coast of Asia, there standeth a rocke, exceeding white and bright withall, which is so transparent and shining from the verie bottome of the sea to the top of the water, that the Tunies (affrighted at the sodaine sight thereof) to auoid it, goe alwaies amaine in whole flotes, toward the cape

ouer against Bizantium, which cape therupon beareth the name of Auricorum. And therefore it is, that the Bizantines make great gaine by fishing for them: whereas the Chalcedonians haue a great misse of that commoditie, and yet the arme of the sea or frith betweene them, is not past halfe a mile, or a mile at the most, ouer. Nost they euer wait for the North wind, that (together with the tide) they might with more ease passe out of Pontus. Howbeit, the onely taking of them at Bizantium, is when they return again into Pontus. In Winter the Tunnies stirre not nor raunge abroad: but looke, wheresoeuer they are then found to be, there they take vp their Winter herbour, and make their abode vntill the spring Æquinoctiall about mid-March. Many times they will accompanie the ships that saile thereby with full winde, and it is a wonderfull pleasant sight for the sailers to see them from the sterne, how for certaine houres together, and for the space of some miles, they will follow and attend vpon the poupe, be the wind neuer so good, nay, although they strike at them with the trout-spear sundry times, or lance at them some three-tined instrument, yet will they not be chased away, nor skared. These Tunnies that thus wait vpon the ships vnder saile, some cal Pompili. Many of them passe the Summer-time in Propontis, and neuer enter into Pontus. Soles likewise vse the same manner, and yet yee shall haue many Turbots there. Neither shall a man finde the Cuttil there, although there be good store of Sea-cuts or Calamaries. Moreouer, of stone fishes, such as liue among rocks, the sea Thrush, the sea Merle, and the purple shel-fishes are not to be found, where Oysters notwithstanding are in great abundance. For all such Winter in the Ægæan sea, called now Archipelago. Of them that enter into the sea Pontus, there is none staies there, but goes forth again, saue only the shell fish called the Saredane, or Trichia: for I thinke it good, in such diuersitie of fishes names, seeing that one and the selfe same fish is in many countries called diuersly, to vse the Greeke name for the most of them. These fish, I say, alone go vp the riuer Ister, and out of it they passe againe by certain issues and conduits vnder the ground, and so descend into the Adriatick sea: and euermore a man shall see this kind of fish comming down thither, but neuer mounting vp again out of that sea. The right fishing for the Tunnies, & the only taking of them is from the rising of the star* Vergiliæ, to the setting of Arcturus. All the winter time besides they lie hidden in the deep, at the bottom of pits and gulfes within the sea, vnlesse they come forth to take their pleasure in some warme season, or otherwhiles when the Moon is at the full. They grow sometime so fat, that their skins will not hold, but they are ready to cleaue and burst withall. The longest time that they liue is 2 yeres and not aboue. Moreouer, there is a little creature or vermine, made somwhat like a Scorpion, & as big as a spider, which vsually will set her sharpe sting vnder the finne, both of the Tunnie and also of the sword-fish (which many times is bigger than the Dolphin) and put them to such pain, that to auoid them they oftentimes are driuen to lance themselues, and skip into the very ships. Which propertie they haue also at other times, for feare of the violence of other fishes: & most of all, the Mullets haue this cast with them; and this they doe with such exceeding swiftnesse and agilitie, that they will fling themselues otherwhiles crosse ouer the ships.

*i. In the beginning of May.

Chap. XVI.

¶ *Of presages and foretokenings by fishes, and of their diuersitie.*

NAture willing to endue this Element also of the water with some Auguries, hath giuen to fishes likewise a kind of prescience and foreknowledge of things to come. And verily during the Sicilian war, as *Augustus Cæsar* walked along the shore vpon the sands, there was a certain fish leapt forth of the sea, and light at his very feet. The Soothsaiers and wisards vpon this occurrent, being sought vnto, gaue this construction thereof, and presaged thereby, That they who at that time were lords of the sea, and held it in subiection, should be ranged vnder the obedience of *Cæsar*, and at his deuotion. And yet at that present it is thought and said, That god *Neptune* had adopted *Sex. Pompeius* for his son, so fortunate he was, and such exploits had he atchieued vpon the sea.

The female kind of fishes are commonly bigger than the males. And there are some sorts of them, whereof there be no males at all, but all females, as the Erythini and the Chani. For they be taken alwaies spawners, and full of egs.

Fishes that be skaled, for the most part swim in troups, and sort together. The best fishing is before the sun be vp: for then fishes see least or not at all. For if the nights be cleere and Moonshine

shine, they see as well by night as day. Moreouer, they say that it is good fishing twise in one and the same hole: for commonly vpon the second cast, the draught is better than the first. Fishes loue passing well to tast oile; they ioy also and like well in soft & gentle shewers, & therewith they wil feed and grow fat. And good reason there is of it: for why? we see by experience that canes & reeds, although they breed in meers and standing waters, yet they grow not to the purpose without rain. Moreouer, it is obserued, that fish keeping euermore in one dead pooie and neuer remoued, wil die wheresoeuer it be, vnlesse there fall rain water to refresh them. All fishes feele the cold of a sharpe and hard winter, but those especially, who are thought to haue a stone in their head, as the Pikes, the Chromes, Scienæ, & Pagri. If it be a bitter season in winter, many of them are taken vp blind. And therefore during those cold moneths, they lurk hidden in holes, and within rocks, like as we haue said, certain land creatures doe. But aboue all others the Lobstars called Hippuri, and the Coracini, cannot abide extremity of cold, & therefore be neuer caught in winter, vnles it be at certain times when they come forth of their holes, which they keep daily, and neuer stir but then. In like sort, the Lamproie, the Orphe, the Conger, Perches, and all Stone-fishes that loue rocks and grauell. Men say verily, that the crampe-fish, the Plaice, and the Sole lie hidden all winter in the ground, that is to say, in certain creuisses and chinks which they make in the bottome of the sea. Contrariwise, some again be as impatient of heat, and can as ill away with hot weather, and therefore about Mid-summer for 60 daies they lie hidden and are not to be seen: as the fish Glaucus, the Cod, and the Gilthead. Of riuer fishes, the Silurus or Sturgeon in the beginning of the dog-daies is blasted and stricken with a planet: at other times also in a thunder & lightening he is smitten, so as therewith he is astonied and lieth for dead. And some thinke that the like accident befalleth to the sea Bream Cyprinus. And verily, all quarters of the sea throughout, feele the rising of the dog-starre: but most of all the influence and power thereof is to be seen in the streight of Bosphorus: for then may a man perceiue ordinarily the reits of the sea, and the fishes flote aloft, and the sea so troubled, that euery thing is cast vp from the bottome to the vpper part of the water.

Chap. XVII.

¶ *Of the Mullet and other fishes: and that the same in all places are not of like request.*

THe Mullets haue a naturall ridiculous qualitie by themselues, to be laughed at: for when they be afraid to be caught, they wil hide their head, and then they think they be sure enough, weening that all their body is likewise hidden. These Mullets neuertheless are so lecherous, that in the season when they vse to ingender, in the coasts of Phœnice & Languedock, if they take a milter out of their stews or pooles where they vse to keep them, and draw a long string or line through the mouth and gils, and so tie it fast, and then put him into the sea, holding the other end of the line still in their hands, if they pul him again vnto them, they shal haue a number of spawners or femals follow him hard at taile to the bank side. Semblably, if a man do the same with a female in spawning time, hee shall haue as many milters follow after her. And in this manner they take an infinit number of Mullets.

In old time our ancestors set more store by the Sturgeon, & it carried the name aboue all other fishes. He is the only fish that hath the scales growing ouer the head: hee swims against the streame. But now adaies there is no such reckoning & account made of him: wherat I maruell much, considering he is so hard and seldome to be found. Some call him Elops: afterwards *Cornelius Nepos*, and *Laberius* the Poet and maker of mery rimes haue written, that the sea Pikes and the cods got away all the credit from the Sturgeon, & were of greatest request. As for the Pikes aforesaid, the best and most commendable of all others be they which are called Lanati, as a man would say cotton Pikes, for the whitenesse & tenderneſse of their flesh. Of cods there be two sorts, Callarie, or Haddocks, which be the lesse: and Bacchi, which are neuer taken but in the deep, and therfore they are preferred before the former. But the Pikes that are caught in the riuer be better than all others. The fish called Scarus now carrieth the price & praise of all others, & this fish alone is said to chew cud, to liue of grasse and weeds, and not to prey vpon other fishes. In the Carpathian sea great store of them is found: & by their good will they neuer passe the cape or promontorie Lesbos in Troas. In the daies of *Tiberius Claudius* the Emperor,

Optatus his freed man (who sometime had bin a slaue of his) and then Admiral and Lieutenant generall of a fleet vnder him, brought them first out of that sea, and with them stored the whole coast of our seas betweene Ostia and Campania. Order was taken by straight inhibitions for the first fiue yeares, to kill none that were put into those seas, but if any were taken, that they should be cast in againe. In processe of time many of them came to be found and taken vp all along the coast of Italy, whereas before, they were not to be had in those parts. See how gluttonie, and the desire to please a dainty tooth, hath deuised means forsooth to sow fish, & to transplant them as it were, to to store the sea with strange breed: so that now we need no more maruell, that forraine birds and foules, fet out of far countries, haue their airies at Rome, and breed there. Next to those fishes aboue named, the table is serued with a kinde of Lamprels or Elepouts like to sea Lampreis, which are bred in certain lakes about the Alps, and namely, in that of Rhœtia called Brigantinus: & a strange thing it is, that they should be so like in proportion to those of the sea. Of all other fishes of any good account, the Barbell is next, both in requeſt, and also in plenty. Great in quantity they are not: for hardly shall you find any of them weigh aboue two pound, neither will they feed & grow in stews and ponds. They are bred only in the Northern sea: and neuer shall you see them in the coast of the West Ocean. Moreouer, of this Fish there be sundry sorts. And they liue all of Reits and Seawds, of Oysters, of the fat mud, & of the flesh of other Fishes. They haue all of them 2 beards, as it were, hanging down euidently from their nether jaw. The worst of all this kind, is that which is called Lutarius: & this fish hath another named Sargus, that willingly euermore beareth him company: for whiles hee is rooting into the mud (whereof he taketh his name) then commeth the Sargus, and deuoures the food that is raised therewith. Neither are the Barbels much accepted that keep neere the shore and in the riuer within land. But the best simply are those that tast like vnto the shel-fish Conchylium. *Feneſtella* gaue them the name Mulli, of certaine moyles or fine shooes, which in colour they do resemble. They cast spawn thrice in one yere at the least: for so often their young Fry is seen. Our great belligods say, that a Barbell when he is dying, changeth his hue, and turneth into an hundred colours: the proofe and experience whereof may be seen if he be put into a glasse: for through it, it is a prety sport to see how he altereth and changeth his skales beeing ready to die, one way into a pale and wan colour, otherwhiles into a reddish hue, one after another for many times together. *M. Apicius* (who was a man of all others most inuentiue and wonderful for his witty deuises to maintain riot and excesse) thought it was a singular way to stifle and kill these Barbels in a certain pickle, called the Roman Allies sauce (see how euen such a thing as that, hath found a surname forsooth & a proper addition.) And he also went about to prouoke men to deuise a certain manger or broth made of their liuers, like to that dripping or grauie called Alec that commeth of Fishes when they pine and corrupt. For surely it is more easie for me to say who set men a work that way first, than set down who woon the best game in the end, and was the greatest glutton. *Asturius Celer*, a man of great calling and high place, who sometime had bin Consull, shewed his prodigalitie in this Fish, & it was when *C. Caligula* was Emperor: for he gaue for one Barbell eight thousand Sesterces. Certes, the consideration hereof rauisheth my mind, and carrieth it away to behold & wonder at those, who in their reproofs of gluttonie and gourmandise, complained that a cooke carried a greater price in the market than a good horse of seruice. For now adaies a cooke will cost as much as the charge of a triumph: and one Fish as deare as a cook. And to conclude, no man is better esteemed and regarded more, than he that hath the most cunning cast to waste the goods, & consume the substance of his lord and master.

Chap. XVIII.

¶ *Of the Barbil, the fish Coracinus, Stock-fish, and Salmon.*

Licinius Mutianus reporteth, That in the red sea there was taken a Barbell that weighed 80 pounds. Oh, what a price would he haue borne among our gluttons here with vs! What would he haue cost our prodigall spendthrifts, if hee had bin taken vpon our coasts neere Rome? Moreouer, this is the nature of fish, that some are chiefe in one place, and some in another. As for example, the Coracinus in Egypt carieth the name for the best fish. At Gades in Spain, the Doree or Goldfish, called Zeus and Faber. About the Isle Ebusus, the Stock-fish is much

much called for; whereas in other places it is counted but a base muddy and filthy fish; and which no where else they know how to seeth perfectly, vnlesse it be first well beaten with cudgels. In the country of Aquitaine or Guienne in France, the riuer Salmon passeth all other sea Salmons whatsoeuer.

Of fish, some haue many folds of guils, some single, others double. At these guils they deliuer again and put forth the water that they take in at the mouth. You may know when fish be old by their hard scales: and yet all fishes are not scaled alike. There be two lakes in Italy at the foot of the Alps, named Larius and Verbanus, wherein fishes are to be seen euery yeare at the rising of the star Vergiliæ, thicke of scales, and the same sharp pointed like to the tongues of buckles, wherwith horsemen or men at arms do fasten their greaues: and neuer els but about that moneth do they appeare.

Chap. XIX.

¶ *Of the fish Exocœtus.*

THe Arcadians make wonderous great account of their Exocœtus; so called, for that hee goeth abroad and taketh vp his lodging on the dry land to sleep. This fish (by report) about the coast Clitorius hath a kind of voice, and yet is without guils. And of some he is named Adonis. But besides him, the sea Tortoises also, (called Mures Marini) the Polypes & Lampreies vse to go forth to land. Moreouer, in the riuers of India there is one certaine fish doth so, but it leaps back again into the water: for whereas many other fishes passe out of the sea into riuers and lakes, there is great and euident reason thereof, namely, for that they are in more safetie there, both to cast their spawn vnder the wind where the water is not so rough, and full of waues: and also to bring forth their little ones, becauſe there be no great fishes to deuour them. That these dumb creatures should haue the sence herof, thus to know these causes, and obserue duly their times, is very strange and wonderfull, if a man would sound the depth thereof: but more he would maruell to consider, how few men there be that know which is the best season for fishing, while the Sun passeth through the signe Pisces.

Chap. XX.

¶ *A diuision of fishes according to the forme and shape of their bodies.*

OF sea fishes some be plain and flat, as Byrts or Turbots, Solds, Plaice, & Flounders. And these differ from the Turbots onely in the making of their body: for in a Turbot the right side turns vpward, and in a Plaice the left. Others again be long and round, as the Lamprey and Congre. And hereupon it is that they haue a difference in their fins, which Nature hath giuen to fish in stead of feet. None haue aboue foure, some two, some three, others none at all. Only in the lake Fucinus there is a fish which in swimming vseth 8 fins. All that be long and slipperie, as Eeles and Congres, haue ordinarily two in all, and no more. Lampries haue none to swim with, ne yet perfect guils: all of this kind winde and wriggle with their bodies within the water, and so erche forward like as serpents doe vpon the earth. They creepe also when they are vpon dry land, and therefore such liue longer than the rest out of the water. Also of the foresaid flat fishes some haue no finnes, as the puffin or fork-fish: for their bredth serueth them sufficiently to beare them vp, and to swim. And amongst those that are counted soft, the Pourcuttell hath no fins, for his feet standeth him in stead of fins to swim with.

Chap. XXI.

¶ *Of Yeeles.*

YEeles liue 8 yeares. And if the North wind blow, they abide aliue without water 6 daies, but not so long in a Southern wind. But yet in Winter time they may not endure to be in a little water, nor if it be thick and muddy: whereupon, about the rising of the star Virgiliæ they be commonly taken, for that the riuers about that time vse to be troubled. Their feeding most commonly is in the night. Of all fish, they alone, if they be dead, flote not aboue the water.

CHAP.

Chap. XXII.

¶ *The manner of taking them in the lake Benacus.*

THere is a lake in Italy called Benacus, within the territorie of Verona, through which the riuer Mincius runs: at the issue whereof euerie yere about the moneth of October, when the Autumne star Arcturus ariseth, whereby (as it euidently appeareth) the lake is troubled as it were with a winter storme and tempest, a man shall see rolling amongst the waues a wonderfull number of these Yeels wound & tangled one within another: insomuch as in the leapweeles and weernets deuised for the nonce to catch them in this riuer, there be found sometime a thousand of them wrapped together in one ball.

Chap. XXIII.

¶ *Of the Lamprey.*

THe Lamprey spawneth at all times of the yeare, whereas all other fishes are deliuered of their yong at one certain season or other. The egs or spawne grow to a great passe exceeding soon. If they chance to slip out of the water to dry land, the common sort is of opinion that they ingender with serpents. The male or milter of this kinde *Aristotle* calls Myrus. And herein is the difference, that the spawner, properly called Murena, is of sundry colors, and withall but weake: but the Mylter or Myrus is of one hue, & withall very strong, hauing teeth standing without his mouth. In the North parts of France all the Lampreis haue in their right jaw seuen spots, resembling the seuen stars about the North pole, called *Charlemaines* Waine. They be of a yellow colour, and glitter like gold so long as the Lampreies be aliue; but with their life they vanish away, and be no more seene after they be dead. *Vedius Pollio*, a gentleman of Rome by calling, and one of the great fauorits and followers of *Augustus Cæsar*, deuised experiments of cruelty by means of this creature: for hee caused certain slaues condemned to die, to be put into the stewes where these Lampreies or Murænes were kept, to be eaten and deuoured by them: not for that there were not wilde beasts ynow vpon the land for this feat, but because he tooke pleasure to behold a man torne and pluckt in pieces all at once: which pleasant sight he could not see by any other beast vpon the land. It is said, if they taste vineger, of all things, they become inraged and mad. They haue a very thin and tender skinne: contrariwise, Yeels haue as thick & tough. And *Verrius* writeth, that boyes vnder 17 yeres of age were wont to be swinged and whipped with Yeeles skinnes, and therefore they were freed from all other mulct and punishment.

Chap. XXIV.

¶ *Of flat and broad Fishes.*

OF flat and broad fishes there is another sort, which in lieu of a chine or backe bone haue a gristle. As the Ray or Skait, the Puffin like vnto it, the Maids or Thornbacke, and the Crampfish: moreouer, those which the Greekes haue termed by the names of their sea Cow, their Dog-fish, their Ægle and Frog of the sea. In this rank are to be ranged the Squali also, albeit they are not so flat and broad. All this kind in general *Aristotle* hath called in Greek Selache, and he was the first that gaue them that name: we in Latine cannot distinguish them, vnlesse we call them all Cartilaginea, that is to say, Cristly fish. But all the sort of them that deuoure flesh are such: and their manner is to feed lying backward, like as we obserued in the dolphins. And wheras other fishes cast spawn which resemble knots of egs; these gristly fishes only, as also those great ones which we call Cete, *i.* Whales, bring forth their yong aliue. And yet I must except one kind of them which they call Rana, *i.* sea Frogs.

Chap. XXV.

¶ *Of Echeneis* [i. *the Stay-ship.*]

THere is a very little fish keeping vsually about rocks, named Echeneis: it is thought, that if it settle and stick to the keele of a ship vnder water, it goeth the slower by that means: whereupon

whereupon it was so called: and for that cause also it hath but a bad name in matters of loue, for inchanting as it were both men and women, and bereauing them of their heat and affection that way: as also in law cases, for delay of issues and iudicial trials. But both these imputations and slanders it recompenseth again with one good vertue and commendable quality that it hath: for in great bellied women if it be applied outwardly it stayeth the dangerous flux of the womb, and holds the child vnto the full time of birth: howbeit it is not allowed for meat to be eaten. *Aristotle* thinketh, that it hath a number of feet, the fins stand so thick one by another.

As for the shell fish Murex, *Mutianus* saith it is broader than the Purple, hauing a mouth neither rough nor round, ne yet with a beck pointed cornered-wise, but plain and euen, hauing a shell on both sides winding and turning inward. These fishes chanced vpon a time to cleaue fast vnto a ship, bringing messengers from *Periander*, with commission to gueld all the Noblemens sonnes in Gnidos, and stayed it a long time, notwithstanding it was vnder saile, and had a strong gale of a fore-winde at the poupe. And hereupon it is, that these Shell fishes for that good seruice are honoured with great reuerence in the Temple of *Venus* among the Gnidians.

But to returne again vnto our Stay-Ship Echeneis, *Trebius Niger* saith it is a foot long, and fiue fingers thicke, and that oftentimes it stayeth a ship. And moreouer, as he saith, it hath this vertue being kept in salt, to draw vp gold that is fallen into a pit or well being neuer so deep, if it be let downe and come to touch it.

Chap. XXVI.

¶ *The changeable nature of Fishes.*

THe Cackarels change their colour: for these fishes being white all Winter, wax blacke when Summer comes. Likewise the Mole or Lepo called Phycis, doth alter her hue: for howsoeuer all the yeare besides it be white, in the Spring it is speckled. This is the only fish that builds vpon the reites and mosse of the sea, and layes her egs or spawneth in her nest. The sea Swallow flieth, and it resembleth in all points the bird so called. The sea Kite doth the same.

Chap. XXVII.

¶ *Of the fish called the Lanterne, and the sea Dragon.*

THere is a fish comes ordinarily aboue the water, called Lucerna, for the resemblance that it hath of a light or lantern: for it lilleth forth the tongue out of the mouth, which seemeth to flame and burne like fire, and in calme and still nights giues light and shineth. There is another fish that puts forth hornes aboue the water in the sea, almost a foot and halfe long, which thereupon tooke the name Cornuta. Againe, the sea Dragon if he be caught and let go vpon the sand, worketh himselfe an hollow trough with his snout incontinently, with wonderfull celeritie.

Chap. XXVIII.

¶ *Of bloudlesse fishes.*

SOme fishes there be which want bloud, whereof wee now will speake. Of them are three sorts: first, those which be called Soft: secondly, such as be couered within crusts: & in the last place, they that are inclosed within hard shels. Of the first sort, counted soft, be reckoned the sea Cut or Calamarie, the Cuttle, the Polype, and the rest of that sort. These haue their head betweene their feet and the belly, and euery one of them haue 8 feet. As for the Cuttil and Calamarie, they haue two feet apiece longer than the rest, and the same rough, wherewith they conuey and reach meat to their mouths: and with those they stay themselues as it were with anchor hold against the surging waues: the rest of their feet be smal like hairs, and with them they hunt and catch their prey.

CHAP.

Chap. XXIX.

¶ *Of the Calamaries, Cuttles, Polypes, and Boat-fishes called Nautili.*

ALso the Calamarie lanceth himselfe out of the water, as if he were an arrow; and euen so doth little Scalops. The male of the Cuttles kind are spotted with sundry colors more dark and blackish, yea and more firme and steady than the female. If the female be smitten with a Trout-speare, or such like three-forked weapon, they wil come to aid & succor her: but she again is not so kind to them, for if the male be stricken she will not stand to it, but runs away. But both of them, the one as wel as the other, if they perceiue that they be taken in such streights that they cannot escape, shed from them a certain black humor like to ink, and when the water therewith is troubled and made duskish, therein they hide themselues and are no more seen.

Of Polypes or Pourcontrels there be sundry kinds. They that keep neere the shore are bigger than those that haunt the deep. All of them help themselues with their fins and armes, like as we do with feet and hands: as for their taile, which is sharp and two forked, it serueth them in the act of generation. These Pourcontrels haue a pipe in their back, by the help wherof they swim all ouer the seas; and it they can shift one while to the right side, & another while to the left. They swim awry or sidelong with their head aboue, which is very hard and as it were pust vp so long as they be aliue. Moreouer, they haue certain hollow concauities dispersed within their clawes or arms like to ventoses or cupping glasses, whereby they will stick to, and cleaue fast as it were by sucking, to any thing, which they clasp & hold so fast, lying vpward with their bellies, that it cannot be plucked from them. They neuer settle so low as the bottom of the water, and the greater that they be, the lesse strong they are to clasp or hold any thing. Of all soft fishes they only go out of the water to dry land, especially into some rough place, for they cannot abide those that are plaine and euen. They liue vpon Shell-fishes, and with their haires or strings that they haue they will twine about their shels and crack them in pieces: wherefore a man may know where they lie and make their abode by a number of shels that lie before their nest. And albeit otherwise it be a very brutish and senslesse creature, so foolish withall, that it will swim and come to a mans hand; yet it seems after a sort to be witty and wise, keeping of house and maintaining a familie: for all that they can take they carry home to their nest. When they haue eaten the meat of the fishes, they throw the empty shels out of dores, and lie as it were in ambuscado behind, to watch and catch fishes that swimme thither. They change their colour eftsoons, and resemble the place where they be, & especially when they be afraid. That they gnaw and eat their own clees and arms, is a meere tale; for they be the congres that do them that shrewd turn: but true it is that they will grow againe, like as the taile of snakes, adders, & lizards. But among the greatest wonders of nature, is that fish which of some is called Nautilos, of others Pompilos. This fish, for to come aloft aboue the water turnes vpon his back, and raiseth or heaueth himself vp by little and little: and to the end he might swim with more ease, as disburdened of a sinke, hee dischargeth all the water within him at a pipe. After this, turning vp his two foremost clawes or armes, he displaieth and stretcheth out betweene them a membrane or skin of a wonderfull thinnesse: this serueth him in stead of a saile in the aire aboue water: with the rest of his arms or claws he roweth and laboreth vnder water, & with his taile in the mids he directs his course, and steereth as it were with an helme. Thus holds he on and maketh way in the sea, with a faire shew of a foist or gally vnder saile. Now if he be afraid of any thing in the way, he makes no more ado but drawes in water to ballace his body, and so plungeth himselfe down, and sinketh to the bottom.

Chap. XXX.

Of the many-foot fish called Ozæna, of the Nauplius, and Locusts of the sea, or Lobster.

OF the Polypus or Pourcontrell kind with many feet, is the Ozæna, so called of the strong fauor of their heads, for which cause especially, the Lampreys follow in chase after him. As

A As for the Many-feet or Pourcuttels, they lie hidden for two months together: and aboue two yeares they liue not. They die alwaies of a consumption or Phthysicke: the female sooner than the males, and ordinarily after that they haue brought forth their yong frie. I cannot ouerpasse but record the reports of *Trebius Niger*, one of the traine and retinue of *L. Lucullus* Proconsull in Bœtica, which he vpon his knowledge deliuered as touching these Many-feet fishes called Polypi, namely, That they are most desirous and greedie of cockles, muscles, and such like shell-fishes: and they againe on the contrarie side, so soone as they feele themselues touched of the Polypes, shut their shels hard, and therwith cut asunder their clawes or armes, that were gotten within: and thus fall they to feed vpon those, who sought to make a prey of them. [Now in very truth these shel-fishes, all of them see not at all, neither haue they any other sense, but tasting of their meat, & feeling of their drinke.] These Polypi foreseeing all this, lie in wait to spie when
B the said cockles, &c. gape wide open, and put in a little stone between the shels, but yet beside the flesh & bodie of the fish, for feare left if it touched and felt it, she would cast it forth again: thus they theeue, and without all daunger and in securitie get out the fleshie substance of the meat to deuoure it: the poore cockles draw their shels together for to clasp them between (as is aboue-said) but all in vaine, for by reason of a wedg between, they will not meet close nor come neere together. See how subtle and craftie in this point these creatures be, which otherwise are most sottish and senseless. Moreouer, the said *Trebius Niger* affirmeth, that there is not any other beast nor fish in the sea more daungerous to doe a man a mischiefe within the water, than is this Pourcuttle or Many-feet Polypus: for if he chance to light on any of these diuers vnder
C the water, or any that haue suffered shipwracke and are cast away, he assailes them in this manner: He catcheth fast hold of them with his clawes or armes, as if he would wrestle with them, and with the hollow concauities and noukes between, keepeth a sucking of them; and so long he suckes and sokes their bloud (as it were cupping-glasses set to their bodies in diuers places) that in the end he draweth them drie. But the only remedie is this, to turne them vpon their backe, and then they are soone done and their strength gone: for let them lie so, they stretch out themselues abroad, and haue not the power to clasp or comprehend any thing. And verily all liuing creatures in the sea loue the smell of them exceeding well, which is the cause that fishers besmare and anoint their nets with them, to draw and allure fishes thither.

The rest which mine author hath related as touching this fish, may seem rather monstrous
D lies and incredible, than otherwise: for he affirmed, that at Carteia there was one of these Polypi, which vsed commonly to go forth of the sea, and enter into some of their open cesterns and vauts among their ponds and stewes, wherein they keep great sea-fishes, and otherwhiles would rob them of their salt-fish, and so go his waies againe: which he practised so long, that in the end he got himselfe the anger and displeasure of the maisters and keepers of the said ponds and cesterns, with his continuall & immeasurable filching: whereupon they staked vp the place and empalled it round about, to stop all passage thither. But this thief gaue not ouer his acustomed haunt for all that, but made meanes by a certaine tree to clamber ouer and get to the fore-said salt fish; and neuer could he be taken in the manner, nor discouered, but that the dogges by their quick sent found him out and baied at him: for as he returned one night toward the sea, they
E assailed and set vpon him on all sides, and therwith raised the foresaid keepers, who were affrighted at this so sudden an alarm, but more at the strange sight which they saw. For first and foremost this Polype fish was of an vnmeasurable and incredible bignesse: and besides, he was besmeared & beraied all ouer with the brine and pickle of the foresaid salt-fish, which made him both hideous to see to, and to stinke withall most strongly. Who would euer haue looked for a Polipe there, or taken knowledge of him by such marks as these? Surely they thought no other, but that they had to deale and encounter with some monster: for with his terrible blowing and breathing that he kept, he draue away the dogs, and otherwhiles with the end of his long stringed winding feet, he would lash and whip them; somtimes with his stronger clawes like arms he rapped and knoked them well and surely, as it were with clubs. To summe, he made such good
F shift for himselfe, that hardly and with much adoe they could kill him, albeit he receiued many a wound by trout-spears which they launced at him. Wel, in the end his head was brought and shewed to *Lucullus* for a wonder, & as big it was as a good round hogshead or barrel that would take and containe 15 Amphores: and his beards (for so *Trebius* tearmed his clawes and long-stringed feet) carried such a thicknesse and bulke with them, that hardly a man could fathome one

one of them about with both his armes, ſuch knockers they were knobbed and knotted like clubs, and withall 30 foot long. The concauities within them, and hollow veſſels like great baſons, would hold 4 or 5 gallons apeece: and his teeth were anſwerable in proportion to the bignes of his bodie. The reſt was ſaued for a wonder to be ſeene, and weighed 700 pound weight. This author of mine *Trebius* affirmeth, that Cuttels alſo and Calamaries haue been caſt vpon that ſhore, ful as big. Indeed in our ſea there be Calamaries taken of 5 cubits long, and Cuttels of twaine, in length: and theſe liue not aboue two yeares

Mutianus reporteth, that himſelfe ſaw in Propontis another kind of fiſh carying as it were a ſhip of his owne, and making ſaile with it like to ſome galley: and a ſhel-fiſh it was faſhioned with a keele like to a barge or barke, with a poupe embowed and turned vp: yea and armed as it were in the proe with a three-forked pike. Within which lay hidden (as he ſaith) another liuing creature called Nauplius, reſembling a Cuttle fiſh; and for no other reaſon in the world, but to make ſport and play with it for companie. Now the manner of this paſtime and ſailing was in two ſorts: for if it were a calme ſea and the winds downe, the Nauplius afore-ſaid that went as a paſſenger in this ſhell, would put downe his feet into the water like ores, and row therewith; but if a gale of wind were aloft, he would ſtretch the ſame alength & make them ſerue in ſtead of an helme to ſteere withall; and then the Coquil or ſhel-fiſh would ſpread and diſplay it ſelfe like ſailes, to gather wind: ſo as the one of them tooke a pleaſure to carrie, in manner of the veſſell; the other had his delight to labour as a mariner, and to direct withall like a pilot. Thus theſe two fiſhes (otherwiſe ſenſeleſſe & blockiſh) take their pleaſure together, vnles peraduenture it fall out vnhappily (for certain it is that ſuch a ſight as this preſages no good to ſailers) that men marre their ſport, and either part them aſunder, or force them to ſinke vnder water.

The Lobſters (beeing of that kinde which wanteth bloud) haue a tender and brittle cruſt to couer and defend them. For fiue months they lie hidden. The Crabs likewiſe, who at the ſame time keep cloſe & ſecret: and both of them in the beginning of euery ſpring caſt their old coats or ſhels as ſnakes do their skins, & take them that be new & freſh. Al others of this kind ſwim within the water: but the Lobſters flote aloft, and creepe as it were vpon the water. So long as they are ſecure of any feare and danger, they go directly ſtraight, letting downe their hornes at length along their ſides, which naturally by themſelues haue a round point or bob at the end: but if they be in any feare, go vp thoſe hornes ſtraight, and then they creepe byas and goe ſidelong. With theſe horns they oftentimes maintaine battaile one with another. Of all creatures, this only hath a tender and ſhort kind of fleſh, which in the ſeething will not hang together, vnleſſe it be ſodden aliue in ſcalding water, and then it will be ſtiffe and callous as brawne.

Chap. XXXI.

Of Sea-crabs, Vrchins of the ſea, and great Vrchins called Echinometræ.

As for the Lobſters, they loue rocks and ſtonie places: but Crabs delight in ſoft and delicate places. In winter, they ſeeke after the warme or ſun-ſhine ſhore: but when ſummer is come, they retire into the coole and deepe holes in the ſhade. All the ſort of them take harme and paire by winter: in autumne and ſpring, they battle and wax fat; and eſpecially when the moon is at the full: becauſe that planet is comfortable in the night time, & with her warme light mitigateth the cold of the night. Of theſe Crab-fiſhes, there be many kinds: to wit, Lobſters, Creyfiſhes of the ſea, crabs of Barbarie called Maiæ, Grampels, Grits or Pungiers, Crabs of Heraclea, yellow riuer Creyfiſhes, and diuers others of more baſe account. As for the Lobſters, they differ from the reſt in taile. In Phœnicia, there is a kind of Crabs called Hippœe, or rather Hippeis (that is to ſay, Horſes or Horſmen) which are ſo ſwift, that it is impoſſible to ouertake them. Crabs liue long: eight clees or feet they haue apeece, all crooked and hooked: the female hath the fore-clee double, the male but ſingle. Moreouer, two of the legs or arms are forked and toothed like pincers. The vpper part of theſe foreclawes doth ſtir: the nether part moueth not. The right leg in them al is bigger than the left. When they come in skuls all together (as ſomtimes they doe) they are not able to paſſe one by another the ſtreights of the ſea Pontus about Conſtantinople, whereupon they are forced to returne back againe and fetch a compaſſe about, and the beaten way with their tracks may be ſeene. The leaſt of all theſe kind of Crabs, is called

called Pinnotheres [or Pinnoteres] and for his ſmalneſſe moſt ſubiect and expoſed to iniurie. But as ſubtill and crafty he is as he is little; for his maner is to ſhroud and hide himſelf within the ſhels of empty oiſters, and euer as he growes bigger and bigger, to go into thoſe that be wider. Crabs when they be afraid will recule backward as faſt as they went forward. They will fight one with another, and then ye ſhall ſee them jur and butt with their horns like rams. Singular good they are againſt the bitings and ſtingings of ſerpents. It is reported, that while the Sun is in the ſigne Cancer, the bodies within of dead crabs that lie without the water vpon drie land, wil turne to be ſcorpions. Of the ſame ſort that the crabs be are the vrchins of the ſea called Echini; and theſe in ſtead of feet haue certain pointed prickles. Their maner of going is to roll themſelues and tumble round; and therefore many times ſhall yee finde them with their pricks worne. And of this ſort be they that are called Echinometræ. The longeſt prickles they haue of all others, and the leaſt ſhels or caſes wherein they are. Neither are they all of the ſame colour of glaſſe; for about Torone they are found to be white, hauing ſmall pricks. They haue all of them fiue egs when they lay, but they are bitter. Their mouths ſtand in the mids of their bodies, bending down toward the earth. It is ſaid they haue a fore-knowledge of a ſea tempeſt: for by reaſon that they are ſo round, and therefore ſoone whirled and caried here and there, they fall then to labor and gather ſtones, wherewith they charge and peiſe their bodies as with ballaſt, that they may abide more ſted faſt, for that they are not willing to weare their pricks with rolling and turning ouer and ouer: which when the mariners and ſailers perceiue once, they preſently caſt many anchors and ſtay their ſhips.

Chap. XXXII.

¶ *Of Winckles and ſea Snailes.*

In the ſame ranke are to be reckoned the Winkles as well of land as water. When they put themſelues out of their ſhels they thruſt out two hornes that they haue, and wil pluck them in again when they liſt. Eyes they haue none to ſee withall, and therefore theſe little hornes ſerue them in good ſtead to ſound, as it were, and try the way as they go.

Chap. XXXIII.

¶ *Of Scallops: of the greateſt Winkle called Murex, and other kinds of ſhell-fiſhes.*

The great Scallops in the ſea are counted for the ſame race which lie hid alſo in the time as well of great heat as cold. They haue certaine nailes as it were ſhining like fire in the night ſeaſon; yea in their very mouthes that eat them. As for the Pourcelanes or Murices, they haue a ſtronger skaled ſhell; as alſo all the kind of Winkles great and ſmall. Wherin a man may ſee the wonderfull varietie of Nature in this play and paſtime of hers, giuing them ſo many and ſundry colours, with ſuch diuerſitie of formes and figures; for of them yee ſhall haue flat and plain, hollow, long, horned like the moon croiſſant, full round, halfe round, & cut as it were iuſt through the mids, bow-backt, and riſing vp, ſmooth, rough, toothed and indented like a ſaw, ridged and chamfered between, wrinkling and winding vpward to the top like Caltropes, bearing out ſharpe points in the edges, without-forth broad and ſpread at large, within rolled in pleits. Moreouer, there be other diſtinct ſhapes beſides all theſe: ſome be ſtriped and raied with long ſtreaks, others creſted and blaſing with a buſh of long haire: ſome againe criſped and curled, others made like an hollow gutter or pipe: ſome faſhioned as it were a comb, others waving with plaits one aboue another tile-wiſe, others framed in the manner of a net or lattiſe: ſome are wrought crooked and byas, others ſpred out directly in length. A man ſhall ſee of them thoſe that are made thick and moſſie thruſt together and compact, others ſtretcht forth at large: ye ſhall haue of them wrapt and lapt one within another: and to conclude, yee ſhall find them run round into a ſhort faſt knot, and all their ſides vnited together in one: ſome flat and plain good to giue a clap, others turning inward crooked like a cornet, made as it were to ſound and wind withall. Of all theſe ſorts, the Pourcelanes or Venus-Winkles ſwim aboue the water, and with their concauitie or hollow part which they ſet into the weather, help themſelues in ſtead of ſailes, and ſo gathering wind, ſaile as it were aloft vpon the ſea. The manner

of the Scalops is to skip, and otherwhiles they will leap forth of the water. They alſo can find G the meanes to make a boat of themſelues, and ſo flote aboue and ſaile handſomly.

Chap. XXXIV.

¶ *The riches of the ſea.*

BVt what meane I all this while to ſtand vpon theſe ſmall trifling matters, when as in very truth the ouerthrow of all honeſtie, the ruin of good maners, and in lieu thereof all riot and ſuperfluity proceeds from theſe ſhel-fiſhes, and from nothing ſo much? for now the world is grown to this paſſe, that there is nothing in it what ſoeuer ſo chargeable to mankind, nothing H ſo hurtfull and dangerous as is the very ſea, and that ſo many waies; namely, in furniſhing the table with ſuch varietie of diſhes, in pleaſing and contenting the taſte with ſo many dainty and delicate fiſhes; and thoſe carry the higheſt price that be gotten with greateſt hazard and danger of thoſe that take them, otherwiſe they be of no regard and value to ſpeake of.

Chap. XXXV.

¶ *Of Pearles, how and where they be found.*

HOwbeit al that before named is nothing in compariſon of the Purples, pretious Coquils and Pearls that come from thence. It was not ſufficient belike to bring the ſeas into the I kitchen, to let them down the throat into the belly, vnleſſe men and women both caried them about in their hands and eares, vpon their head, and all ouer their body. And yet what ſocietie and affinitie is there betwixt the ſea and apparell? what proportion betwixt the waues and ſurging billowes thereof, and wooll? for ſurely this element naturally receiues vs not into her boſom vnleſſe we be ſtark naked: and ſet the caſe there were ſo great good fellowſhip with it and our bellies; how comes our backe and ſides ro be acquainted with it? But wee were not contented to feed with the peril of ſo many men, vnleſſe we be clad and araied alſo therewith. O, the folly of vs men! ſee how there is nothing that goeth to the pampering and trimming of this our carcaſſe, of ſo great price and account, that is not bought with the vtmoſt hasard, and coſteth not the venture of a mans life! But now to the purpoſe. The richeſt merchandiſe of all, and the moſt ſoueraigne commoditie throughout the whole world are theſe Pearles. The Indian ocean is chief for ſending them: and yet to come by them, we muſt go and ſearch among thoſe huge & terrible monſters of the ſea, which we haue ſpoken of before: we muſt paſſe ouer ſo many ſeas, and ſaile into far countries ſo remote, and come into thoſe parts where the heate of the ſun is ſo exceſſiue and extreme; and when all is done we may perhaps miſſe of them: for euen the Indians themſelues are glad to ſeeke among the Iſlands for them, & when they haue done all they can, meet with very few. The greateſt plenty of them is to be found in the coaſt of Taprobane and Toidis, as hath bin ſaid before in our Coſmographie and deſcription of the world: and likewiſe about Perimula a promontorie and city of India. But the moſt perfect L and exquiſite of all others be they that are gotten about Arabia, within the Perſian gulfe. This ſhell-fiſh which is the mother of Pearle, differs not much in the maner of breeding and generation from the Oyſters: for when the ſeaſon of the yeare requireth that they ſhould engender, they ſeeme to yawne and gape, and ſo do open wide; and then (by report) they conceiue a certaine moiſt dew as ſeed, wherewith they ſwell and grow big, and when time commeth labor to be deliuered hereof: and the fruit of theſe ſhell fiſhes are the Peares, better or worſe, great or ſmall, according to the qualitie and quantitie of the dew which they receiued. For if the dew were pure and cleare which went into them, then are the Pearles white, faire, and Orient: but if groſſe and troubled, the Pearles likewiſe are dimme, foule, and duskiſh; pale (I ſay) they are, if the weather were cloſe, darke, and threatning raine in the time of their conception. Where- M by (no doubt) it is apparant and plaine, that they participate more of the aire and ſky, than of the water and the ſea; for according as the morning is faire, ſo are they cleere: but otherwiſe, if it were miſty and cloudy, they alſo will be thicke and muddy in colour. If they may haue their full time and ſeaſon to feed, the Pearles likewiſe will thriue and grow bigge; but if in the time it doth chance to lighten, then they cloſe their ſhells together, and for want of nou-

riſhment

A riſhment are kept hungrie and faſting, and ſo the pearles keepe at a ſtay and proſper not accordingly. But if it thunder withall, then ſuddenly they ſhut hard at once, and breed only thoſe excreſcences which be called Phyſemata, like vnto bladders puft vp and hooued with wind, & no corporal ſubſtance at all: and theſe are the abortiue & vntimely fruits of theſe ſhel fiſhes. Now thoſe that haue their ful perfection, and be ſound and good indeed, haue many folds and skins wherein they be lapt, not vnproperly as it may be thought, a thicke, hard, and callous rind of the body, which they that be skilfull do pill and clenſe from them. Certes, I cannot chuſe but wonder how they ſhould ſo greatly be affected with the aire, and joy ſo much therein: for with the ſame they wax red, and loſe their natiue whiteneſſe and beau.ie, exen as the bodie of a man or woman that is caught and burnt with the ſun. And therefore thoſe ſhels that keep in the maine B ſea, and lie deeper than that the ſun-beames can pierce vnto them, keep the fineſt and moſt delicate pearles. And yet they, as orient as they be, waxe yellow with age, become riueled, and looke dead without any liuely vigor: ſo as that commendable orient luſtre (ſo much ſought for of our great lords and coſtly dames) continueth but in their youth, and decaieth with yeares. When they be old, they will proue thicke and groſſe in the very ſhels, and ſticke faſt vnto their ſides, ſo as they cannot be parted from them, vnleſſe they be filed aſunder. Theſe haue no more but one faire face, and on that ſide are round, for the backe part is flat and plaine; and hereupon ſuch are called Tympania, as one would ſay, Bell bearles. We ſee daily of theſe ſhells which ſerue as boxes to carrie ſweet perfumes and precious ointments, and moſt commendable they are for this gift, that in them there be pearls of this ſort naturally growing together like twins. The pearle is ſoft and tender ſo long as it is in the water, take it forth once and preſeutly it harC deneth. As touching the ſhell that is the mother of Pearle, aſſoon as it perceiueth and feeleth a mans hand within it, by and by ſhe ſhutteth, and by that means hideth and couereth her riches within: for well woteth ſhe that therefore ſhe is ſought for. But let the fiſher looke well to his fingers, for if ſhe catch his hand between, off it goeth: ſo trenchant and ſharp an edge ſhe carrieth, that is able to cut it quite a two. And verily this is a juſt puniſhment for the theefe, and none more: albeit ſhe be furniſhed and armed with other means of reuenge. For they keep for the moſt part about craggie rocks, and are there found: and if they be in the deepe, accompanied lightly they are with curſt Sea-dogs. And yet all this will not ſerue to skar men away from fiſhing after them: for why? our dames and gentlewomen muſt haue their eares behanged with them, there is no remedie. Some ſay, that theſe mother-pearls haue their kings and captaines, D as Bees haue: that as they haue their ſwarmes led by a maſter Bee, ſo euery troup and companie of theſe, haue one ſpeciall great and old one to conduct it; and ſuch commonly haue a ſingular dexteritie and wonderfull gift to preuent and auoid all daungers. Theſe they be that the dyvers after pearles are moſt carefull to come by: for if they be once caught, the reſt ſcatter aſunder and be ſoone taken vp within the nets. When they be thus gotten, it is ſaid that they be put vp into earthen pots and well couered with ſalt: and when the ſalt hath eaten and conſumed all the fleſh within, then certaine kernels that were within their bodies (and thoſe be the very pearles) fall down and ſettle to the bottome of thoſe pots. There is no doubt but with much vſe they will weare, yea and change colour thorough negligence, if they be not well looked vnto. Their chief reputation conſiſteth in theſe fiue properties, namely, if they be orient white, great, E round, ſmooth, and weightie. Qualities I may tell you, not eaſily to be found all in one: inſomuch as it is impoſſible to find out two perfitly ſorted together in all theſe points. And hereupon it is, that our dainties and delicates here at Rome, haue deuiſed this name for them, and call them Vnions; as a man would ſay, Singular, and by themſelues alone. For ſurely the Greeks haue no ſuch tearmes for them, neither know they how to cal them: nor yet the Barbarians, who found them firſt out, otherwiſe than Margarit e. In the very whiteneſſe it ſelfe, there is a great difference among them. That which is found in the red ſea, is the clearer and more orient. As for the Indian pearle, it reſembleth the skales and plates of the ſtone called Specularis; howſoeuer otherwiſe it paſſeth all others in greatneſſe. The moſt commendation that they haue is F in their colour, namely, if they may be truly called Exaluminati, i. orient and cleare as Alume. They that be goodly great ones, are commendable in their degree. As for thoſe that are long and pointed vpward, growing downeward broader and broader like a peare, or after the manner of Alabaſter boxes, full and round in the bottome, they be called Elenchi. Our dames take a great pride in a brauerie, to haue theſe not only hang dangling at their fingers, but alſo two or

three of them together pendant at their eares. And names they haue forſooth newly deuiſed G
for them, when they ſerue their turne in this their wanton exceſſe and ſuperfluitie of roiot: for
when they knocke one againſt another as they hang at their eares or fingers, they call them
Crotalia, *i.* Cymbals: as if they tooke delight to heare the ſound of their pearles ratling to-
gether. Now adayes alſo it is growne to this paſſe, that meane women and poore mens wiues af-
fect to weare them, becauſe they would be thought rich: and a by-word it is amongſt them,
That a faire pearle at a womans eare is as good in the ſtreet where ſhe goeth as an huiſher to
make way, for that euery one will giue ſuch the place. Nay, our gentlewomen are come now to
weare them vpon their feet, and not at their ſhoo latchets only, but alſo vpon their ſtartops and
fine buskins, which they garniſh all ouer with pearle. For it wil not ſuffice nor ſerue their turne
to carie pearles about them, but they muſt tread vpon pearles, goe among pearles, and walke as H
it were on a pauement of pearles.

Pearles were wont to be found in our ſeas of Italie, but they were ſmall & ruddie, in certain
little ſhell fiſhes which they call Myæ: but more plenty of ſuch were taken vp in the ſtreights
of Boſphorus neere Conſtantinople. Howbeit, in Acarnania there is a little Cochle called
Pinna, [*i.*a Nacre,] which engendreth ſuch. Whereby it may appeare, that there be more than
one ſort of Mother-pearles. For king *Iuba* likewiſe hath left in writing, that in Arabia there is
a kind of ſhell fiſh like vnto a Scallop, ſaue that it is not chamfered, but thick and rough like a
ſea Vrcheon, which beares Pearles within the very fleſh of the fiſh, like vnto haile ſtones. But
now adaies there be no ſuch mother-pearles come to our coaſts. Neither be there found in A-
carnania any of value and reputation. For why they are all in manner without proportion, nei-
ther round nor weighty, and of a marble colour. They rather about the cape of Actium are I
better, and yet they be but little ones: like as they alſo which are taken in the coaſts of Mauri-
tania. *Alexander Polyhiſtor*, and *Sudines*, are of opinion that they will age, and in the end loſe
their colour. That they bee ſollid and not hollow within, is euident by this, that with no fall
they will breake. But they be not alwaies found in the middeſt of the fleſh within the mother-
pearles, but here & there, ſomtime in one place, and ſomtime in another. Verily I haue ſeene of
them about the brim and edges of the ſhell, as if they were readie to goe forth: and in ſome 4,
in others fiue together. Vnto this day few of them haue been knowne to weigh aboue halfe an
ounce and one ſcripture. In * Brittaine it is certain that ſome do grow; but they be ſmall, dim
of colour, and nothing orient. For *Iulius Cæſar* (late Emperour of famous memorie) doth not K
diſſimule, that the cuirace or breaſt-plate which he dedicated to *Venus* mother within her tem-
ple, was made of Engliſh pearles.

Imy ſelfe haue ſeen *Lollia Paulina* (late wife, and after widdow, to *Caius Caligula* the emperor)
when ſhe was dreſſed and ſet out, not in ſtately wiſe, nor of purpoſe for ſome great ſolemnity,
but only when ſhe was to go to a wedding ſupper, or rather vnto a feaſt when the aſſurance was
made, & great perſons they were not that made the ſaid feaſt: I haue ſeen her, I ſay, ſo beſet and
bedeckt all ouer with hemeraulds and pearles, diſpoſed in rewes, ranks, and courſes one by ano-
ther: round about the attire of her head, her cawle, her borders, her peruk of hair, her bondgrace
and chaplet; at her ears pendant, about her neck in a carcanet, vpon her wreſt in bracelets, & on L
her fingers in rings; that ſhe glittered & ſhon again like the ſun as ſhe went. The value of theſe
* 40 millions. ornaments, ſhe eſteemed and rated at * 400 hundred thouſand Seſtertij: and offered openly to
proue it out of hand by her bookes of accounts & reckonings. Yet were not theſe jewels the
gifts and preſents of the prodigall prince her husband, but the goods and ornaments from her
owne houſe, fallen to her by way of inheritance from her grandfather, which he had gotten to-
gether euen by the robbing and ſpoiling of whole prouinces. See what the iſſue and end was of
thoſe extortions and outrageous exactions of his: this was it, That *M. Lollius* ſlandered and de-
famed for receiuing bribes & preſents of the kings in the Eaſt; and being out of fauor with *C.*
Cæſar, ſonne of *Auguſtus*, and hauing loſt his amitie, dranke a cup of poiſon, and preuented his iu-
diciall triall: that forſooth his neece *Lollia*, all to be hanged with jewels of 400 hundred thou- M
ſand Seſtertij, ſhould be ſeene glittering, and looked at of euery man by candle-light all a ſup-
per time.

If a man would now of the one ſide reckon what great treaſure either *Curius* or *Fabricius* car-
ried in the pompe of their triumphs; let him caſt a proffer and imagine what their ſhews were,
what their ſeruice at the table was: and on the other ſide, make an eſtimate of *Lollia*, one only
woman

A man, the dowager of an Emperor, in what glory ſhe ſitteth at the bourd, would not be wiſh ra-
ther, that they had been pulled out of their chariots, and neuer triumphed, than that by their vi-
ctories the ſtate of Rome ſhould haue grown to this waſtfull exceſſe & intollerable pride? And
yet this is not the greateſt example that can be produced of an exceſſiue riot and prodigalitie.

Two only pearles there were together, the faireſt and richeſt that euer haue beene knowne in
the world: and thoſe poſſeſſed at one time by *Cleopatra* the laſt queen of Ægypt, which came in-
to her hands by means of the great kings of the Eaſt, and were left vnto her by deſcent. This
princeſſe, when *M. Antonius* had ſtrained himſelfe to doe her all the pleaſure he poſſibly could,
& had feaſted her day by day moſt ſumptuouſly, & ſpared for no coſt: in the hight of her pride
and wanton brauerie (as being a noble curtezan, and a queene withall) began to debaſe the ex-
pence and proniſion of *Antonie*, and made no reckoning of all his coſtly fare. When he thereat
B demanded againe how it was poſſible to goe beyond this magnificence of his, ſhe anſwered a-
gaine, that ſhe would ſpend vpon him at one ſupper * 100 hundred thouſand Seſtertij. *Antonie*, * 10 millions
who would needs know how that might bee (for he thought it was impoſſible) laid a great wa-
ger with her about it, and ſhee bound it againe, and made it good. The morrow after, when this
was to be tried, and the wager either to be won or loſt, *Cleopatra* made *Antonie* a ſupper (becauſe
ſhe would not make default, and let the day appointed to paſſe) which was ſumptuous and roial
ynough: howbeit, there was no extraordinarie ſeruice ſeene vpon the board: whereat *Antonius*
laughed her to ſcorne, and by way of mockerie required to ſee a bill with the account of the
particulars. She again ſaid, that what ſoeuer had been ſerued vp alreadie, was but the ouerplus
aboue the rate & proportion in queſtion, affirming ſtill that ſhe would yet in that ſupper make,
C vp the full ſumme that ſhe was ſeazed at: yea, her ſelfe alone would eat aboue that reckoning,
and her owne ſupper ſhould coſt * 600 hundred thouſand Seſtertij, and with that commanded * 60 millions
the ſecond ſeruice to be brought in. The ſeruitors that waited at her trencher (as they had in
charge before) ſet before her one only crewet of ſharpe vineger, the ſtrength whereof is able to
reſolue pearles. Now ſhe had at her eares hanging theſe two moſt precious pearles, the ſingular
and only jewels of the world, and euen Natures wonder. As *Antonie* looked wiſtly vpon her, and
expected what ſhee would doe, ſhee tooke one of them from her eare, ſteeped it in the vineger,
and ſo ſoon as it was liquified, dranke it off. And as ſhee was about to doe the like to the other,
L. Plancius the iudge of that wager, laid faſt hold vpon it with his hand, and pronounced withal,
D That *Antonie* had loſt the wager. Whereat the man fell into a paſſion of anger. There was an end
of one pearle: but the fame of the fellow thereof may goe with it: for after that this braue queen
the winner of ſo great a wager, was taken priſoner and depriued of her roiall eſtate, that other
pearle was cut in twaine, that in memoriall of that one halfe ſupper of theirs, it ſhould remaine
vnto poſteritie, hanging at both the eares of *Venus* at Rome, in the temple of Pantheon. And
yet as prodigall as theſe were, they ſhall not go away with the prize in this kinde, bnt ſhall loſe
the name of the chiefe and principall, in ſuperfluitie of expence. For long before their time,
Clodius the ſonne of *Æſope* the Tragedian Poet, the only heire of his father, who died exceed-
ing wealthie, practiſed the ſemblable in two pearles of great price: ſo that *Antonie* needeth
not to be ouer proud of his Triumuirate, ſeeing that he hath to match him in all his magnifi-
cence, one little better than a ſtage-plaier: who vpon no wager at all laid, (and that was more
E princely, and done like a king) but only in a brauerie, and to know what taſt pearles had, morti-
fied them in venegre, and drunke them vp. And finding them to content his pallat wondrous
well, becauſe he would not haue all the pleaſure by himſelfe, and know the goodneſſe thereof
alone, he gaue to euery gueſt at his table one pearle apeece to drinke in like manner.

Feneſtella writeth, that after Alexandria was conquered and brought vnder obedience to the
Romans, Pearles were rife at Rome, and commonly vſed of euery man: alſo, that about the trou-
bleſome time of *Sylla* they began firſt to be in requeſt: and thoſe were but ſmall ones, and of no
price. Howbeit, he is groſſely deceiued, and in a great error. For *Ælius Stilo* doth report in his
Chronicle, that in the time of warre againſt *Iugurtha*, the faire and goodly great pearles began
F to be named Vniones.

Theſe Pearles (to ſay a truth) are of the nature (in a manner) of an inheritance to deſcend by
perpetuitie. They follow commonly in right the next heires. When they paſſe in ſaile, they go
with warrantize, in as ſolemne manner as a good lord ſhip.

As for the rich Purples, and the precious Conchyles, euery coaſt is full of them. And yet to

that exceſſe and prodigalitie we are now growne, and out wanton roiot (the mother of all inordinate and waſtfull expence) hath made them well neere as deere as Pearles.

Chap. XXXVI.

¶ *The nature of purple fiſhes, and the Murex or Burret.*

PVrples liue ordinarily ſeuen yeers. They lie hidden for 30 daies ſpace about the dogdaies, like as the Murices or Burrets do. They meet together by troupes in the ſpring, and with rubbing one againſt another, they gather and yeeld a certaine clammie ſubſtance and moiſture in manner of waxe. The Muribes doe the like. But that beautifull colour, ſo much in requeſt for dying of fine cloth, the Purples haue in the midſt of the neck and jawes. And nothing elſe it is, but a little thin liquor within a white veine: & that is it which maketh that rich, freſh, and bright colour of deepe red purple roſes. As for all the reſt of this fiſh, it yeeldeth nothing. Fiſhers ſtriue to get them aliue, for when they die, they caſt vp and ſhed that precious teinture and juice, together with their life. Now the Tyrians, when they light vpon any great Purples, they take the fleſh out of their ſhels, for to get the bloud out of the laid vein: but the leſſer, they preſſe and grind in certain milles, and ſo gather that rich humor which iſſueth from them. The beſt purple colour in Aſia is this, thus gotten at Tyros. But in Africke, within the Iſland Meninx, and the coaſt of the Ocean by Getulia. And in Europe, that of Laconica. This is that glorious colour, ſo full of ſtate and maieſtie, that the Roman Lictors with their rods, halbards, and axes make way for: this is it that graceth and ſetteth out the children of princes and noblemen: this maketh the diſtinction between a knight and a counſellor of ſtate: this is called for & put on when they offer ſacrifice to pacifie the gods: this giueth a luſtre to all ſorts of garments: to conclude, our great Generals of the field, and victorious captaines in their triumphs weare this purple in their mantels, enterlaced and embrodered with gold among. No maruell therefore if Purples be ſo much ſought for: and men are to be held excuſed, if they run a madding after Purples. But how ſhould the other ſhell-fiſhes called Conchylia, be ſo deere and high priſed, conſidering the teincture of them carries ſo ſtrong and ſtinking a ſauor, ſo ſullen and melancholie a colour, enclining to a blew or watchet, and reſembling rather the angrie and raging ſea in a tempeſt? But to come to the particular deſcription. The Purple hath a tongue of a finger long, pointed in the end ſo ſharpe, and hard withall, that it is able to bore an hole and pierce into other ſhell-fiſhes, and thereby ſhee feeds and gets her liuing. In freſh water they will die all, or if they be plunged and throwne in any riuer: otherwiſe, after they be taken, they will continue aliue 50 daies, euen with that viſcous and ſlimie humor of their owne. All ſhel-fiſh in general grow apace in a very ſmall time: but Purples ſooneſt of all others: for in one yere they wil come to their full bigneſſe. Now, if I ſhould lay a ſtraw here, and proceed no further in this diſcourſe of Purples and ſuch like, ſurely our luxurious and riotous ſpendthrifts would thinke they had great wrong, and were defrauded of their right. they might I ſay complaine of me, & condemne me of idleneſſe, and negligence. Therefore I care not much to put my head within the diers ſhops and work-houſes: that like as euery man for the neceſſity of this life, knows how the price of corne goes; euen ſo our fine folke and braue dainties, who take ſuch pleaſure and delight in theſe colors, may be perfect what is the reaſon of this their only life. In the firſt place, theſe ſhel-fiſhes that ſerue either for purple colors, or other lighter dies of the Conchylia, are all one in matter: the difference only is in temperature more or leſſe. And indeed, reduced they may all be into two principall ſorts. For the leſſe ſhell called Buccinum, faſhioned like vnto that horn or cornet, wherewith they vſe to wind and ſound, whereupon in tooke that name, hath a round back, and is cut like a ſaw in the edges. The other is named Purpura, ſhooteth out a long backe like a gutter, and within the one ſide it doth writhe and turne hollow in forme of a pipe, out of which the fiſh puts forth a tongue. Moreouer, this Purple is beſtudded (as it were) euen as far as to the ſharpe top or turbant thereof round about with ſharpe knobs pointed, lightly ſeuen in number: which the ſea-cornet Buccinum hath not. But this is common to both, that looke how many roundles they haue like tendrils claſping about them, ſo many yeares old they bee. As for the Cornet Buccinum, it ſticketh alwaies to great ſtones and rockes, and therefore is euer found and gathered about them.

CHAP.

Chap. XXXVII.

¶ *How many ſorts there be of Purples.*

PVrples haue another name, and be called Pelagiæ, as one would ſay, Fiſhes of the deep ſea. But in truth there be many ſorts of them, & thoſe diffring either in place where they keep, or in food wherof they liue. The firſt Lutenſe, *i.* muddy, becauſe it is nouriſhed of the corrupt and rotten mud: the ſecond Algenſe (the worſt of all) feeding vpon reits or ſea weeds named Alga: the third, Tænienſe (better than the former twaine) for that it is gathered and taken vp about the briins & borders of the ſea, called for the reſemblance of fillets or liſts in a cloth, Tæniæ. And yet this kind ye eldeth but a light colour, and nothing deep: there be of them alſo, which they terme Calculoſæ, of the ſea grauell, which is wondrous good for all theſe kinde of wilkes and ſhell fiſhes. And laſt of all, which ſimply be the very beſt, the Purples Dialetæ, that is to ſay, wandring too and fro, changing their paſture, and feeding in ſundry ſoils of the ſea (the muddy, the weedie, and the grauelly.) Now theſe Purples are taken with ſmall nets, and thinne wrought, caſt into the deep. Within which, for a bait to bite at, there muſt be certain winckles and cockles, that will ſhut and open, & be ready to ſnap, ſuch as we ſee theſe limpins be, called Mituli. Halfe dead they ſhould be firſt, that being new put into the ſea again, & deſirous to reviue and liue, they might gape for water: and then the Purples make at them with their pointed tongue, which they thruſt out to annoy them: but the other feeling themſelues pricked therewith, preſently ſhut their ſhels together, & bite hard. Thus the Purples for their greedineſſe are caught and taken vp, hanging by their tongues.

Chap. XXXVIII.

¶ *The fiſhing time for Purples.*

THe beſt time to take Purples, is after the dog ſtar is riſen, & before the Spring: for, when they haue made that viſcous muſcilage in manner of wax, their iuice and humour for colour is ouer liquid, thin, & wateriſh. And yet the purple diers know not ſo much, nor take heed thereof, whereas indeed the skill thereof is a ſpeciall point of their art, and wherein lieth all in all. Well, when they are caught, as is aboueſaid, they take forth that vein before mentioned; and they lay it in ſalt, or elſe they do not well: with this proportion ordinarily, namely, to euery hundred weight of the Purple liquor, a Seſtier or pint and halfe of ſalt. Full three dayes and no more it muſt thus lie ſoking in powder. For the freſher that the colour is, ſo much is it counted richer and better. This don, they ſeeth it in leads, & to euery Amphore, (*i.* which containeth about eight wine gallons) they put one hundred pound and a halfe juſt, of the colour ſo prepared. Boile it ought with a ſoft and gentle fire, and therfore the tunnel or mouth of the furnace muſt be a good way off from the lead and chawdron. During which time, the workemen that tend the lead, muſt eftſoones skim off and clenſe away the fleſhie ſubſtance, which cannot cleaue but ſtick to the veines which containeth the iuice or liquour of purple beforeſaid. And thus they continue 10 daies, by which time ordinarily the lead or veſſell wil ſhew the liquour cleere, as if it were ſufficiently boiled. And to make a triall thereof, they dip into it a fleece of wool wel renſed & waſht out of one water into another: & till ſuch time, that they ſee it giue a perfect die, they ſtil ply the fire, & giue it a higher ſeething. That which ſtaineth red, is nothing ſo rich as that which giueth the deep & ſad blackiſh color. When it is come to the perfection, they let the wooll lie to take the liquor 5 houres: then they haue it forth, touſe and card it, and put it in againe, vntil it hath drunke vp all the colour, as much as it will. Now this is to be obſerued, that the ſea cornet Buccinum makes no good colour of it ſelfe: for their dye wil ſhed & loſe the luſtre. And therfore vſually they ioine to it the ſea Purple Pelagium, which maketh too deep and brown a colour: vnto which it giueth a freſh & liuely teinture, as it were in grain, and ſo maketh that ſad purple which they deſire. Thus by mixing & medling the force of both together, they mend one another, while the lightneſſe or ſadneſſe of the one doth quicken and raiſe, or els dorr and take downe the colour of the other. To the dying of a pound of wooll, they vſe this proportion of two hundred Buccina or ſea Cornets, ioined with a hundred and eleuen Pelagian Purples: & ſo commeth that rich Amethyſt or purple violet colour, ſo highly commended

mended aboue all other. But the Tyrians make their deep red purple, by dipping their wool first in the liquor of the Pelagian purples only, whiles it is not throughly boiled to the heigth, but as it were green yet and vnripe; and therof they let it take what it can drinke. Soone after they change it into another caudron or lead, where the colour of the sea Cornets alone is boiled. And then it is thought to haue a most commendable and excellent dye, when it is as deep a red as bloud that is cold and setled, blackish at the first sight, but looke between you and the light, it carieth a bright and shining lustre. And hereupon it is, that *Homer* calleth bloud, Purple.

Chap. XXXIX.

¶ *When they began at Rome to weare Purple first.*

I Find in Chronicles, that Purple hath bin vsed in Rome time out of mind. Howbeit, K. *Romulus* neuer ware it but in his roial habit or mantle of estate, called *Trabea*. And wel known it is, that *Tullus Hostilius* was the first Roman king, who after he had subdued the Tuscanes, put on the long purple robe named *Pretexta*, and the cassock broched & studded with scarlet in broad guards. *Nepos Cornelius* who died in the daies of *Augustus Cæsar* the Emperor, When (quoth he) I was a yong man, the light violet purple was rife and in great request, & a pound of it was sold for a * 100 deniers: and not long after the Tarentine red purple or skarlet was much called for, and of the same price. But after it, came the fine double died purple of Tyros, called Dibapha: and a man could not buy a pound of it for a * 1000 deniers, which was the price of ten pound of the other. *P. Lentulus Spinther* in his Ædileship of the chaire, first ware a long robe embroidered with it, and was checked and blamed therefore. But now adaies (quoth *Nepos*) what is he that will not hang his parlour and dining chamber therewith, and haue carpets, cushins, & cupbord clothes thereof. And it is no longer ago when *Spinther* was Ædile, than in the seuen hundreth yeare after the foundation of Rome, euen when *Cicero* was Consull. This purple in those daies was called Dibapha, *i.* twice died: & that was counted a matter of great cost, & very stately withall and magnificent. But now ye shall haue no purple cloths at all of any reckoning, but they haue their double die. As for the cloth died with the purple of the shel-fish Conchylia, the maner of making the colour, and dying in all respects is the same, saue that there be no sea Cornets vsed thereto. Moreouer, the iuice or liquor for that colour, is tempered with water in stead of the filthy pisse and vrine of a man, altogether vsed in the other: and therein is sodden but the halfe proportion of colours to the foresaid tinctures. And thus is made that light pale stammel so highly commended, for being short of the deep rich colour: and the lesse while that the wooll is suffered to drinke the fill, the more bright and fresh it seemeth.

* 3 lib. 2 sbil. 6. d. sterl.

* 32 lib. 5. sbil.

Chap. XL.

¶ *The prices of wooll died with these colours.*

AS for these colours, they are valued dearer or cheaper, according to the coasts where these fishes are gotten more or lesse. Howbeit, it was neuer known that in any place, a pound of the right purple wooll, died with the Pelagian colour, or of the colour it selfe, was more worth than * 500 Sesterces: nor a pound of the Corners purple cost aboue one hundred. I would they knew so much that pay so deare for these wares by retaile here at home, and cannot haue them, but at an excessiue rate. But here is not all, neither is this an end of expence that way, for one still draweth on another: and men haue a delight to spend and lay on still one thing after another: to make mixtures and mixtures again, and so to sophisticate the sophistications of Nature: as namely to paint and die their seelings, euen the very embowed roofs and arches in building: to mix and temper gold and siluer together, therewith to make an artificiall metall Electrum: and by adding brasse or copper thereto, to haue another metall, counterfeiting the Corinthian vessels.

* 3 lib. 18 sbil. 8. d. ob.

Chap. XLI.

¶ *The manner of dying the Amethyst, Violet, or Purple, the Chrymson and Scarlet in grain, and the light Stammell or Lustie-gallant.*

It would not suffice our prodigal spendthrifts to rob the precious stone Amethyst of his name, and to apply it to a colour; but when they had a perfect Amethyst die, they must haue it to be drunken

drunken againe with the Tyrean purple, that they might haue a superfluous and double name compounded of both (Tyriamethistus) correspondent to their two-fold cost and duple superfluitie. Moreouer, after they haue accomplished fully the colour of the Conchylium, they are not content vntill they haue a second die in the Tyrian purple lead. It should seeme, that these double dies and compounded colours, came first from the errour and repentance of the workeman when his hand missed: and so was forced to change and alter that which he had done before, and vtterly misliked. And hereof forsooth is come now a pretty cunning and art thereof: and the monstrous spirits of our wastfull persons are grown to wish and desire that, which was a fault amended first: and seeing the two-fold way of a double charge and expence troden before them by the diers, haue found the meanes to lay colour vpon colour, and to ouercast and strike a rich die with a weaker, so that it might be called a more pleasant and delicate colour. Nay it will not serue their turn to mingle the aboue-said tinctures of sea fishes, but they must also do the like by the die of land-colours: for when a wooll or cloth hath taken a crimson or skarlet in graine, it must be died againe in the Tyrian purple, to make (I would not else) the light, red, and fresh Lustie-gallant.

Alluding to the word Amethyst, which resists drunkennesse.

As touching the Graine, seruing to this tincture, it is red, and commeth out of Galatia, (as we shall shew in our story of earthly plants) or else about Emerita in Portugall, and that of all other is of most account. But to knit vp in one word these noble colours, note this, That when this Graine is but of one yeres age, it maketh but a weake tincture; but after foure yeeres, the strength thereof is gone. So that neither young nor old it is of any great vertue. Thus I haue sufficiently and at large treated of those means which men and women both, so highly esteem, and thinke to make most for their state and honourable port, and setting out of themselues in the best manner.

Chap. XLII.

¶ *Of the Nacre, and his guide or keeper, Pinnoter: and the perceiuance of fishes.*

THe Nacre also called Pinnæ, is of the kind of shell-fishes. It is alwaies found and caught in muddie places, but neuer without a companion, which they cal Pinnoter, or Pinnophylax. And it is no other but a little shrimpe, or in some places, the smallest crab, which beareth the Nacre companie, and waites vpon him for to get some victuals. The nature of the Nacre is to gape wide, and sheweth vnto the little fishes her seelie body, without any eie at all. They come leaping by and by close vnto her: and seeing they haue good leaue, grow so hardie and bold, as to skip into her shel & fill it ful. The shrimp lying in spiall, seeing this good time and opportunitie, giueth token thereof to the Nacre, secretly with a little pinch. She hath no sooner this signall, but she shuts her mouth, and what soeuer was within, crushes and kils it presently: and then she deuides the bootie with the little crab or shrimp, her sentinell and companion. I maruell therefore so much the more at them who are of opinion, that fishes and beasts in the water haue no sence. Why, the very Cramp-fish Torpedo, knowes her own force & power, and being her selfe not benummed, is able to astonish others. She lieth hid ouer head and eares within the mud vnseen, ready to catch those fishes, which as they swim ouer her, be taken with a nummednesse, as if they were dead. There is no meat in delicate tendernesse, preferred before the liuer of this fish. Also the fish called the * sea-Frog, (and of others the sea-Fisher) is as crafty euery whit as the other: It puddereth in the mud, and troubleth the water, that it might not be seen: and when the little feely fishes come skipping about her, then she puts out her little hornes or Barbils which she hath bearing forth vnder her eies, and by little and little tilleth and tolleth them so neere, that she can easily seaze vpon them. In like manner the Skate and the Turbot lie secret vnder the mud, putting out their finnes, which stir and crawle as if it were some little wormes; and all to draw them neer, that she might entrap them. Euen so doth the Ray-fish or Thorn-back. As for the Puffen or Fork-fish, he lieth in await like a theefe in a corner, ready to strike the fishes that passe by with a sharpe rod or pricke that he hath, which is his weapon. In conclusion, that this fish is very subtill and crafty, this is a good proofe, That being of all others most heauie and slow, they are found to haue in their bellie the Mullets, which of all others be the swiftest in swimming.

* Diabletes Mare.

Chap.

CHAP. XLIII.

¶ *Of the Scolopendres, the ſea-Foxes, and the Glanis.*

THeſe Scolopendres of the ſea, are like to thoſe long earewigs of the land, which they call Centipedes, or many-feet. The maner of this fiſh is this, when ſhe hath ſwallowed an hook to caſt vp all her guts within, vntill ſhe hath diſcharged her ſelf of the ſaid hook, and then ſhe ſups them in againe. But the ſea-Foxes in the like danger haue this caſt with them, namely to gather in and let it go downe into the throat more and more ſtill of the line, vntill he come to the weakeſt part thereof, which he may eaſily fret and gnaw aſunder. The Glanis is more ſlie and warie than they both: for his propertie is to bite at the backe of the hooke, and not to goble it vp whole, but nibble away all the bait, and leaue the hooke bare.

CHAP. XLIIII.

¶ *Of the Ram-fiſh.*

THis fiſh is a very ſtrong theef at ſea, and makes foule work where he comes: for one while he ſquats cloſe vnder the ſhade of big ſhips that ride at anker in the bay, where he lies in ambuſh to wait when any man for his pleaſure would ſwim and bath himſelfe, that ſo he might ſurpriſe them: otherwhiles he puts out his noſe aboue the water, to ſpie any ſmall fiſher boats comming, and then he ſwimmeth cloſe to them, ouerturneth and ſinketh them.

CHAP. XLV.

¶ *Of thoſe that haue a third or middle nature, and are neither liuing creatures nor yet Plants: alſo of the ſea-Nettle-fiſhes, and Spunges.*

IVerily for my part am of opinion, that thoſe which properly are neither beaſts nor plants, but of a third nature between or compounded of both (the ſea-Nettles I mean, and Sponges) haue yet a kinde of ſenſe with them. As for thoſe Nettles, there be of them that in the night raunge too and fro, and likewiſe change their colour. Leaues they carry of a fleſhie ſubſtance, and of fleſh they feed. Their qualitie is to raiſe an itching ſmart, like for all the world to the weed on the land ſo called. His manner is, when he would prey, to gather in his body as cloſe, ſtreight and ſtiffe as poſſibly may be. He ſpieth not ſo ſoon a ſilly little fiſh ſwimming before him, but he ſpratdeth and diſplaieth thoſe leaues of his like wings; with them he claſpeth the poore fiſh, and ſo deuoures it. At other times, he lies as if he had no life at all in him, ſuffering himſelfe to be toſſed and caſt too and fro among the weeds, with the waues of the ſea: and look what fiſh ſoeuer he toucheth as he is thus floting, hee ſets a ſmart itch vpon them, and whiles they ſcratch and rub themſelues againſt the rockes for this itch, hee ſets vpon them and eates them. In the night ſeaſon he lieth for ſea-Vrchens and Scalops. When he feeleth ones hand to touch him, he changeth colour, and draweth himſelfe in cloſe together on a heape: and no ſooner toucheth he one, but the place will itch, ſting, and be ready to bliſter: make not good haſt to catch him quickly, he is hidden out of hand and gone. It is thought verily, that his mouth lyeth in his root, and that he voideth his excrements at a ſmall pipe or iſſue aboue, where thoſe fleſhie leaues are.

Of Spunges, we find three ſorts: the firſt thicke, exceeding hard, and rough; and this is called Tragos: a ſecond, not all ſo thicke, and ſomewhat ſofter; and that is named Manon: the third is fine and yet compact, wherewith they make ſponges to cleanſe and ſcoure withall, and this is tearmed Achilleum. They grow al vpon rocks: and are fed with wilkes or ſhel-fiſh, with naked fiſh and mud. That they are not ſenſleſſe, appeares hereby, for that when they feele that one would pluck them away, they draw in and retire back hard, ſo as with greater difficulty they are pulled from the rocke. The like doe they when they be beaten vpon with waues. That they liue vpon ſome food, it is manifeſt by the little coquill & muſcle ſhels that be found within them. And ſome ſay, that about Torone they continue ſtill aliue after they be pulcked frow the rocks: and that of the roots which are left behind, they grow againe. Moreouer, vpon thoſe rocks from whence they be pulled, there is to be ſeen as it were ſome bloud ſticking; & eſpecially in thoſe of Africke, which breed among the Syrtes. The Manæ, which otherwiſe be the leaſt, become very great & moſt ſoft withall, about Lycia. But they be more delicate which are nouriſhed in the

deep gulfes, where leaſt wind or none is ſtirring. The rough kind are in Helleſpont: and the fine and maſſie, about the cape Malea. In ſun-ſhine places they will corrupt and putrifie; and therefore the beſt are in the deep gulfs and creeks, not expoſed to the Sun. They be of the ſame dusk and blackiſh colour when they liue, as they are afterwards being ſoked & full of moiſture. They cleaue to rocks neither by any one part, nor yet entire and whole all ouer: for there are between, certain void pipes 4 or 5 commonly, by which they are ſuppoſed to receiue their food and nouriſhment. There be more of theſe pipes and concauities, but aboue they are grown together hard and not hollow. A certain pellicle or thin skin a man may perceiue them to haue at their roots. For certain it is knowne, that they liue long. The worſt kind of them all, be thoſe that are called Aplyſiæ, becauſe vnneth they may bee ſeparated, nor cleanſed and made cleane, they are ſo foule, for great pipes they haue; thicke they are beſides throughout, and very maſſie.

CHAP. XLVI.

¶ *Of Hound fiſhes or Sea-dogs.*

THe dyuers that vſe to plunge into the ſea, are annoied very much with a number of Sea-hounds that come about them, and put them in great jeopardie. And they ſay, that theſe fiſhes haue a certain dim cloud or thin web, growing & hanging ouer their heads, reſembling broad, flat, and griſtly fiſhes, which clingeth them hard, and hindreth them from retiring backe and giuing way. For which cauſe the ſaid dyuers (as themſelues ſay) carry downe with them certaine ſharp pricks or goads faſtened to long poles: for vnleſſe they be proked at and pricked with them, they will not turn their backe; by reaſon (as I ſuppoſe) of a miſt before their eies, or rather of ſome feare & amazednеſſe that they be in. For I neuer heard of any man that found the like cloud or miſt (for this term they giue vnto that vnhappie thing what-euer it be) in the range of liuing creatures. But yet much ado they haue and hard hold with theſe Hound-fiſhes notwithſtanding; for they lay at their bellies and groines, at their heeles, and ſnap at euery part of their bodies that they can perceiue to be white. The onely way and remedy is to make head directly affront them, and to begin with them firſt, and ſo to terrifie them: for they are not ſo terrible to a man, but they are as fraid of him againe. Thus within the deepe they are indifferently euen matched: but when the dyuers mount vp and riſe againe aboue water, then there is ſome ods betweene, and the man hath the diſaduantage, and is in more danger; by reaſon that whiles he laboureth to get out of the water, he faileth of means to encounter with the beaſt, againſt the ſtreame and ſourges of the water. And therefore his only recourſe is, to haue help and aid from his fellowes in the ſhip; for hauing a cord tied at one end about his ſhoulders, he ſhaketh it with his left hand, to giue ſigne what danger hee is, whiles hee maintaineth fight with the right, by taking into it the puncheon with the ſharpe point beforeſaid; and ſo at the other end they draw him to them: and they need otherwiſe to pull and hale him but ſoftly: mary when he is neere once to the ſhip, vnleſſe they giue him a ſudden jerke and ſnatch him vp quickly, they may be ſure to ſee him worried and deuoured before their face; yea and when they are at the point to be plucked vp, and euen now ready to go aboord, they are many times caught away out of their fellows hands, if they beſtir not themſelues the better, and put their owne good will to the help of them within the ſhip; namely, by plucking vp their legs and gathering their bodies nimbly together round as it were in a ball. Well may ſome from ſhip-boord proke at the dogs aforeſaid with forks; others thruſt at them with Trout ſpeares & ſuch like weapons, and all neuer the neere, ſo craftie and cautelous is this foule beaſt, to get vnder the very bell of the barke, and ſo maintain combat in ſafety. And therefore all the care that theſe fiſhers haue, is to prouide for this miſchiefe, and to lie in wait for to entrap theſe fell, vnhappie, and ſhrewd monſters.

CHAP. XLVII.

¶ *Of thoſe fiſhes that lie within a ſtonie and hard flintie ſhell: alſo of thoſe that haue no fence: and of other naſtie and filthie creatures.*

THe greateſt ſecuritie that fiſhers and dyuers haue of ſafety, is when they ſee the broad flat griſtly fiſhes; for certain it is, that they be neuer in a place where hurtfull and noiſome beaſts

beasts do haunt: which is the cause that these dyuers which ducke and plunge for sponges, call those fishes Sacred.

We must needs confesse, that fishes within stone shels, haue small or no sense, as namely oisters. Many are of the nature of very Plants, to wit, those that they cal Holothuria: also Pulmones, resembling the lungs of a beast: and Star-fishes, made in forme of stars (such stars I meane as it pleaseth the Painter to draw.) In sum, what is there not bred within the sea? Euen the very fleas that skip so merily in summer time within victualling houses and Ins, and bite so shroudly: as also lice that loue best to lie close vnder the haire of our heads, are there engendred & to be found: for many a time the fishers twitch vp their hooks, and see a number of these skippers and creepers setled thicke about their baits which they laied for fishes. And this vermine is thought to trouble the poore fishes in their sleep by night within the sea, as well as vs on the land. Last of all, some fishes there be, which of themselues are giuen to breed fleas and lice, among which the Chalcis, a kind of Turbot, is one.

Chap. XLVIII.

¶ *Of venomous Sea-fishes.*

MOreouer, the sea is not without her deadly poisons: for the Sea-hare, which keepeth in the Indish sea, is so venomous, that the very touching of him is pestiferous; & presently causeth vomiting and ouerturning of the stomacke, not without great danger. They which be found in our sea, seeme to be a peece or lump of flesh without all forme or fashion, in colour only resembling the land Hare. But with the Indians they be full as big, and resemble their Hare, only it is more stiffe and hard. And verily they cannot possibly be taken there aliue. The dragon or spider of the sea, is as dangerous & mischieuous a creature as the other: and with the pricks that stick forth of his chine and back-bone, hee doth much hurt. But in no place is there any more detestable and pernicious, than is the pike, that standeth out vpon the taile of Trigonius, which we in Latine call *Pastinaca*, i. the Puffin or Forkfish of the sea; the which pike is fiue inches long. So venomous it is, that if it be strucke into the root of a tree, it killeth it: it is able to pierce a good cuirace or iacke of buffe, or such like, as if it were an arrow shot or a dart lanced: but besides the force and power that it hath that way answerable to yron & steele, the wound that it maketh is therewith poisoned.

Chap. XLIX.

¶ *Of Fishes diseases.*

WE do not heare or reade, that all sorts of fishes in generall be subiect to maladies and diseases, as other beasts, and euen those that are wilde and sauage. But that this or that fish in euery kinde may be sicke, it appeareth euidently, that some of them mislike and come to be carrion leane; whereas others of the same sort, be taken, not only in good plight, but exceeding fat.

Chap. L.

¶ *The wonderfull manner of their generation.*

IN what sort fishes do engender, if I should not in this place shew, but put it off farther, I should do great wrong to mankind, who desire to know it, as much as they wonder how it should be. In one word, fishes ingender by the friction and rubbing of their bellies one against another: which they performe with such celeritie, that no eye is so quicke as to note and obserue it. Dolphins, and other great whales, haue no other way but that, mary they are longer somewhat about their businesse. The spawner, when the time ferueth for generation, followeth after the male, and neuer linneth pecking and iobbing at his belly with her muzzle. Semblably a little before spawning time, the milters follow after the female, only for that they would eat their spawn when they haue cast it. But this is to be noted moreouer, that the foresaid mixture & ingendring of theirs is not sufficient to accomplish generation, vnlesse when their egs be laid or spawne cast, both male and female take it betweene them and keepe a turning of it, thereby to

A to breath a liuely spirit into it, and as it were besprinkle it with a vitall dew, as it floteth vpon the water. But turne they it and tosse it, breath they vpon it as much as they will, yet all those little egs of their spawne do not hit and come to proose: for if they did, all seas and lakes, and al riuers and pools would be so pestered ful with fishes, that a man would see nothing els: for there is not one of these females, but at once conceiueth an infinite number in her belly.

Chap. LI.

¶ *More as touching the generation of fishes, and which they be that do spawne in manner of egges.*

B THe spawne or egs of Fishes in the sea, do grow vnto perfection, some of them exceeding soon, as that of the Lampreies: others are later ere they do so. All flat and broad Fishes, such namely as haue no tails and sharp pricks to hinder (as haue the Thorn-backe, Skate, and Tortoises) when they engender, leap one another. The many foot Pour-cuttles in this action fasten one of their winding clawes to the nose of the female. The Cuttels and Calamaries do the feat with their tongues or pipes rather thrust into their mouthes, clasping one another with their arms, and swimming one contrary to the other: and as they conceiue at the mouth, so they deliuer their fruit again at the mouth. This onely is the difference, that the she Calamaries in this busines, beare their heads downward to the earth. As for those that are soft crusted, they do it backward as dogs. Thus the Lobsters & Shrimpes ingender. Crabs at the mouth, Frogs leap one another: the male with the fore-feet clasps the arm-pits of the female, and with
C the hind-feet the hanches. That which is ingendred and brought forth, is as it were some little mites of blackish flesh, which they call Tadpoles or Polwigs, shewing no good form, but that they haue some shew of eies only, and a taile. Some few daies after, their feet are framed, & then parts their taile in twain, which serueth for their feet behind. And a strange thing it is of them: after they haue liued some 6 months, they resolue into a slime or mud, no man seeth how: & afterward with the first rains in the Spring, returne again to their former state, as they were first shapen, no man know s after what sort, by a secret and vnknown way incomprehensible: notwithstanding it fals out ordinarily so euery yere. As for the Limpins, Muskles, and Scallops, they
D breed of themselues in the mud and sands of the sea. Those which are of an harder coat, as the Pourcelanes and Purples, of a certain viscous and slimy substance like a mucilage. As for that little fry, resembling small gnats and flies of the sea, they come of a certaine putrifaction and sowernesse of the water: as the Apuæ, which are the groundlings and Smies, of the some of the sea set in an heat & chafed after some good shewer. They that are couered with a stony shell, as Oisters, breed of the rotten and putrified slime & mud of the sea: or of the some that hath stood long about ships or stakes and posts set fast in the water, and especially if they bee of Holme wood. Howbeit, it hath bin found of late in Oister pits, that there passeth from them in stead of Sperm a certain whitish humor like milk. As for Yeels they rub themselues against rocks and stones, and those scrapings (as it were) which are fretted from them, in time come to take life and proue snigs, and no other generation haue they. Fishes of diuers kinds engender not one
E with another, vnlesse it be the Skate and the Raifish: and of them there commeth a fish, which in the forepart resembleth a Ray, & in Greek hath a name compounded of both [Rhinobatos.] Other fishes there be that breed indifferently on land and sea, according to the warme season of the yeare. In Spring time Scallops, Snailes, and Horsleeches do engender, and by the same warmth quicken and come to life; but in Autumne they turn to nothing. The Pike & Sardane breed twice a yere, like as al stone fish: the Barbels thrice, as also a kind of Turbit called Chalcis [i. the Shad:] the Carp 6 times: the Scorpenes and Sargi twice, namely, in Spring and Autumne. Of flat broad Fishes, the Skate only twice in the yere, to wit, in Autumne, and at the setting or occultation of the star *Vergiliæ*. The greatest number of Fishes ingender for 3 moneths,
F April, May, & Iune. The Cods or Stockfishes in Autumne. The Sargi, Crampfishes, & Squali about the equinoctiall. Soft skinned Fishes in the spring: and the Cuttel in euery month. The spawn of this Fish, which hangeth together like a cluster of grapes, by the means of a certaine blacke glew or viscositie like inke, the Milter doth blow and breath vpon before it can bee good, for otherwise it commeth to no proose. The Pour-cuttles engender in Winter, and in the Spring, and then bring forth a spawne crisped and curled (as it were) like the wreathing

branches and tendrils of a vine branch;and that in such plenty, that when they are killed they are not able to receiue and containe the multitude of their egs in the concauitie or ventricle of their head and belly, which they bare when they were great. They hatch them in fifty daies, but many of them proue addle and neuer come to good,there is such a number of them. The Lobsters and the rest with thin shels, lay egge after egge,and sit vpon them in that manner. The female Pourcuttle,one while sitteth ouer her egs,another while she couereth the cranie or gutter where she hath laid them,with her clawes and arms enfolded crosse one ouer another lattise wise. The Cuttle laieth also vpon the dry land among the reeds,or els whersoeuer she can find any sea-weeds or reits to grow,& by the 15 day hatcheth. The Calamaries lay egs in the deep, which hang close and thick together,as the Cuttles do. The Purples,Burrets,and such like, do lay in the Spring. The sea Vrchins are with egge euery full moone in the winter time: and the winkles or cocles are bred in the winter likewise. The Crampfish is found to haue 80 young at once within her,and hatcheth her tender and soft egs within her bodie, shifting them from one place of the wombe to another. In like manner do all they which are called Cartilagineus, or gristly. By which it commeth to passe,that fish alone both conceiue with egge, and yet bring forth a liuing creature. The male sheath-fish or riuer-whale Silurus,of al others only is so kind as to keep and looke to the egs of the female after they be laid,many times for fifty daies after, for feare they should be deuoured of others. Other females hatch in three daies, if the male touch them. The Horne-beaks or Needle-fishes Belonæ,are the only fishes which haue within them so great egs that their wombe cleaueth and openeth when they should lay them: but after that they be discharged of them,it groweth together and vniteth againe. A thing vsuall (as they say) in Blind-wormes. The fish called Mus-Marinus, diggeth a gutter or ditch within the ground,and there laieth her egs,and the same she couereth ouer with earth,and so lets them alone for 30 daies,then she commeth and openeth the place again,findeth her egs hatched,and leadeth her little ones to the water.

Chap. LII.

¶ *Of fishes wombes.*

THe shel-fishes Erythini & Chanæ, haue their wombs or matrices. As for that fish which in Greeke is called Trochos[*i.*the top]is thought to get it selfe with yong. The frie of all water creatures,at the first see not.

Chap. LIII.

Of the exceeding long life of fishes.

IT is not long since that we heard of one fishes memorable example, which proued the long life of fishes. There is a faire house of retreat and pleasure called Pausilupum, in Campaine not far from Naples;where(as *Anneus Seneca* writeth) there died a fish in the fish-pooles of *Cæsar*,60 yeres after that it had bin put in by *Pollio Vedius*: and there remained two more of that age and of the same kind,which liued still. And since wee are come to make mention of fish-ponds,me thinks I should do well to write somwhat more thereof,before I giue ouer this discourse of fishes and water creatures.

Chap. LIV.

¶ *Of Oyster pits,and who first deuised them.*

THe first that inuented stewes and pits to keep oysters in,was *Sergius Orata*,who made such about his house in Baianum,in the daies of *L.Crassus* that famous oratour,before the Marsians war. And this the man did not for his belly and to maintain gourmandise, but of a couetous mind for very gain. And by this and such wittie deuises, he gathered great reuenues: for he it was that inuented the hanging baines and pooles to bathe in aloft vpon the top of an house:and thus when he had set out his manour house for the better sale,he would make good merchandise of them,and sell them againe for commoditie and gaine. He was the first man that brought the Lucrine Oysters into name and credit for their excellent taste. For so it is, that

that the same kinds of fishes,in one place are better than in another. As the Pikes in the riuer Tiberis,which are taken between the two bridges:the Turbot of Rauenna:the Lamprey in Sicilie:the Elops at Rhodes,and so forth of other sorts of fishes:for I do not meane here to make a bill of all the dainty fish to serue the kitchin. There was no talk then of English oisters,when *Orata* brought those of the Lucrine lake into requeſt, for as yet the Brittish coasts were not ours;which indeed haue the best oisters of all other. But afterwards it was thought it would quit the cost and pay for the pains,to fetch oisters from the furthest part of Italy,euen as far as Brundisium. And because there should grow no quarrell,nor controuersie arise, whether these or the former had the more delicate and pleasant taste, it was of late deuised that the hungrie oisters(which in the long cariage from Brundise were almost famished) should be fed with the rest in the Lucrine Lake,and so taste alike. In those very daies,but somwhat before *Orata*, *Licinius Murena* deuised pools and stews for to keep and feed other fishes:whose example noblemen followed and did the like after them;namely,*Philip* and *Hortensius*. *Lucullus* cut through a mountain neere vnto Naples for this purpose,namely,to let in an arm of the sea into his fish pooles: the doing whereof cost him more mony,than the house it selfe which he there had built. Hereupon *Pompey* the great gaue him the name of Roman *Xerxes*,in his long robe. The fishes of that poole of his,after his death,were sold for thirty hundred thousand Sesterces,*i.*three milions of Sesterces.

Chap. LV.

¶ *Who inuented the stewes for Lampreyes.*

CAius Hirtius was the man by himselfe,that before all others deuised a pond to keep Lampreys in. He it was that lent *Cæsar* Dictator for to furnish his feasts and great suppers during the time of his triumph,600 Lampreys, to be paied againe by weight and tale in the same kind: for sel them he would not right out for any mony,nor exchange them for other commodities. A house he had for his pleasure in the country,and but a very little one,yet the ponds and fishes about it sold the house for foure milions of Sesterces. In processe of time folk grew to haue a loue and cast a fancy to some one seuerall fish aboue the rest. For the excellent Orator *Hortensius* had an house at Bauli,vpon the side that lieth to Baiæ, & a fish-pond to it belonging:and he took such an affection to one Lamprey in that poole,that when it was dead(by report)he could not hold but weep for loue of it. Within the same poole belonging to the said house,*Antonia* the wife of *Drusus*(vnto whom they fell by inheritance) had so great a liking to another Lamprey,that she could find in heart to decke it,and to hang a paire of golden earings about the guils thereof. And surely for the nouelty of this strange sight,and the name that went thereof,many folke had a desire to see Bauli,and for nothing els.

Chap. LVI.

¶ *The stewes of Winkles,and who first was the deuiser.*

FVluius Hirpinus was the first inuentor of warrens as it were for Winkles,which he caused to be made within the territory of *Tarquinij*,a little before the ciuil war with *Pompey* the great. And those had their distinct partitions,for sundry sorts of them:that the white,which came from the parts about Reate,should be kept apart by themselues: the Illyrian (and those were chiefe for greatnesse)alone by their selues:the Africans (which were most fruitfull) in one seuerall: and the Solitanes(simply the best of all the rest)in another. Nay more than that,he had a deuise in his head to feed them fat,namely,with a certain paste made of cuit & wheat meale, and many other such like:to the end forsooth,that the gluttons table might be serued plentifully with home-fed & franked great Winkles also. And in time,men grew to take such a pride and glory in this artificial feat,and namely,in striuing who should haue the biggest,that in the end one of their shels ordinarily would containe * 80 measures called Quadrants, if *M. Varro* say true,who is mine Author.

* 3 wine gallons and three quarts:for Quadrans is 3 Cyathi,*i.*the 4 part of Sextarius, & Sextarius is a wine pint & a halfe, or 18 ounces.

Chap. LVII.

¶ *Of Land-fishes.*

Theophraſtus alſo telleth ſtrange wonders of certain kinds of fiſhes, which are about Babylon, where there be many places ſubiect to the inundations of Euphrates and other riuers, and wherein the water ſtandeth, after that the riuers are returned within their bankes: in which the fiſh remain in certain holes & caues. Some of them, ſaith he, vſe to iſſue forth aland for food and releeſe, going vpon their fins in lieu of feet, and wagging their tailes euer as they go. And if any chaſe them, or come to take them, they will retire back into their ditches aforeſaid, and there make head and ſtand againſt them. They are headed like to the *ſea Frog, made in other parts as Gudgeons, and guilled in manner of other fiſhes. Moreouer, that about Heraclea and Cromna, and namely neere the riuer Lycus, & in many other quarters of the kingdom of Pontus, there is one kind aboue the reſt that euer haunteth riuers ſides, and the vtmoſt edges of the water: making her ſelfe holes vnder the banks, and within the land wherin ſhe liueth, yea, euen when the banks are drie, and the riuers gathered into narrow channels. By reaſon whereof they are digged forth of the earth: and as they ſay that find them, aliue they be, as may appeare by mouing and ſtirring of their bodies. Neere vnto the aboueſaid Heraclea & the riuer Lycus, when it is falne and the water ebbe, there be fiſhes breed of the egges and ſpawne left vpon the mud and ſand, who in ſeeking for their food, do ſtir and pant with their little guils: which they vſe to do when they want no water, but euen then when as the riuer is full. Which is the reaſon alſo that yeeles liue a long time after they be taken forth of the water. He affirmeth moreouer, that the egs of fiſhes lying vpon the dry land, will come to their maturity and perfection, and namely thoſe of the Tortoiſes. Alſo, that in the ſame country of Pontus, there be taken fiſhes vpon the yce, and gudgeons eſpecially, which ſhew not that they be aliue, but by their ſtirring and leaping when they come to be ſodden in hot caudrons. Hereof may ſome reaſon yet be rendred, although the thing be ſtrange and wonderful. The ſame author auoucheth, that in Paphlagonia there be digged out of the ground certaine land fiſhes that be excellent good meat, and moſt delicate: but they be found in dry places remote from the riuer, & whither no waters flow, whereby they are forced to make the deeper trenches for to come by them. Himſelf maruelleth how they ſhould engender without the help of moiſture. Howbeit, hee ſuppoſeth that there is a certain minerall and naturall force therin, ſuch as we ſee to ſweat out in pits, foraſmuch as diuers of them haue fiſhes found within them. What ſoeuer it is, ſurely leſſe wonderfull this is, conſidering how the Moldwarps liue (a creature naturally keeping vnder the ground) vnleſſe haply we would ſay that fiſhes were of the ſame nature that earth wormes be of.

** Or this ſea dinell.*

Chap. LVIII.

¶ *Of the mice of Nilus:*

But the inundation of Nilus cleareth all theſe matters: the ouerflowing whereof is ſo admirable, and ſo far paſſeth all other wonders, that we may well beleeue theſe things. For when as this riuer falleth and returneth againe into his channell, a man may find vpon the mud yong Mice halfe made, proceeding from the generatiue vertue of water and earth together: hauing one part of their body liuing already, but the reſt as yet miſhapen, and no better than the very earth.

Chap. LIX.

¶ *Of the fiſh Anthias, and how he is taken.*

I Thinke it not meet to conceale that, which I perceiue many do beleeue & hold, as touching the fiſh Anthias. We haue in our Coſmographie made mention of the Iſles Cheldoniæ in Aſia, ſcituate in a ſea full of rocks vnder the promontory of Taurus; among which are found great ſtore of theſe fiſhes: and much fiſhing there is for them, but they are ſuddenly taken, and euer after one ſort. For when the time ſeruеth, there goeth forth a fiſher in a ſmal boat or barge for certain daies together, a pretty way into the ſea, clad alwaies in apparel of one and the ſame colour, at one houre, and to the ſame place ſtil, where he caſteth forth a bait for the fiſh: but the fiſh

fiſh Anthias is ſo craftie and warie, that what ſoeuer is thrown forth, he ſuſpecteth it euermore, that it is a means to ſurpriſe him. He feareth therefore and diſtruſteth: and as he feareth, ſo is he as warie: vntill at length, after much practiſe & often vſing this deuiſe of flinging meat into one place, one aboue the reſt groweth ſo hardy and bold, as to bite at it, for now by this time he is grown acquainted with the maner thereof, and ſecure. The fiſher takes good mark of this one fiſh, making ſure reckoning that he wil bring more thither, and be the means that he ſhall ſpeed his hand in the end. And that is no hard matter for him to do, becauſe for certain daies together, that fiſh, & none but he, dare aduenture to come alone vnto the bait. At length this hardy captaine meets with ſome other companions, and by little & little he commeth euery day better accompanied than other, vntil in the end he brings with him infinite troups and ſquadrons together, ſo as now the eldeſt of them all (as crafty as they be) be ſo well vſed to know the fiſher, that they will ſnatch meat out of his hands. Then hee eſpying his time, putteth forth an hook with the bait, ſomwhat beyond his fingers ends, flieth and ſeizeth vpon them more truly, then catcheth them, and ſpeedily with a quick & nimble hand whippes them out of the water within the ſhadow of the ſhip, for feare leaſt the reſt ſhould perceiue, & giueth them one after another to his companion within; who euer as they be ſnatcht vp, latcheth them in a courſe twillie or couering, & keeps them ſure enough from ſtrugling or ſqueaking, that they ſhould not driue the reſt away. The ſpeciall thing that helpeth this game and pretty ſport, is to know the captain from the reſt, who brought his fellows to this feaſt, & to take heed in any hand that he be not twitcht vp and caught. And therfore the fiſher ſpareth him, that he may flie and goe to ſome other flock for to train them to the like banket. Thus you ſee the maner of fiſhing for theſe Anthiæ. Now it is reported moreouer, that one fiſher vpon a time (of ſpightfull minde to do his fellow a ſhrewd turn) laid wait for the ſaid captain fiſh, the leader of the reſt (for he was very wel known from all others) and ſo caught him: but when the foreſaid fiſher eſpied him in the market to be ſold, and knew it was he: taking himſelf miſuſed & wronged, brought his action of the caſe againſt the other, and ſued him for the dammage, and in the end condemned him. *Mutianus* ſaith moreouer, That the plaintife was awarded to haue for recompence, 10 pounds of the defendant. The ſame fiſhes, if they chance to ſee one of their fellows caught with an hook, by report, with their ſharp fins which they haue vpon their backe like ſawes, cut the line in two: for he that hangeth at it, will of purpoſe ſtretch it out ſtreight, that it may be cut aſunder more eaſily. But the Sargots haue another trick for that: for he that finds himſelfe taken, fretteth the line in twaine, whereto the hooke hangeth, againſt a hard rocke.

Chap. LX.

¶ *Of the Sea fiſhes called Starres.*

Over and beſides all theſe, I ſee that ſome deep clerks and great Philoſphers haue made a wonder at the Star in the ſea. And verily it is no other than a very little fiſh, made like a ſtar (as we ſee it painted.) A ſoft fleſh it hath within: but without forth an hard brawnie skin. Men ſay it is ſo fierie hot, that what ſoeuer it toucheth in the ſea, it burneth: and look what meat it receiueth, it makes a hand with it, & digeſteth it preſently. What proofe there is hereof, and how men ſhould come to the knowledge and experience of thus much, I cannot readily ſet downe. I would thinke that rather more memorable and worthy to be recorded, whereof we haue daily experience.

Chap. XLI.

¶ *Of the Dactyli, and their wonderfull qualities.*

Of the ſhell fiſh kind are the Dactyli, ſo called of the likeneſſe of mens nailes, which they reſemble. The nature of this fiſh is to ſhine by themſelues in the darke night, when all other light is taken away. The more moiſture they haue within them, the more light they giue: inſomuch as they ſhine in mens mouths as they be chawing of them: they ſhine in their hands: vpon the floore on their garments, if any drops of their fattie liquor chance to fall by: ſo as it appeareth, that doubtleſſe it is the very iuice & humor of the fiſh which is of that nature, which we do ſo wonder at in the whole body.

Chap. LXII.

¶ *Of the enmitie and amitie which is between fishes and other water beasts.*

Such concord there is in some, and such discord in others, as is wonderfull. The Mullet and the sea-Pike hate one another, and be euer at deadly war: likewise the Congre & the Lamprey: insomuch as they gnaw off one anothers taile. The Lobster is so afraid of the Polype or Pourcuttell, that if he spie him neere, he euermore dieth for very woe. The Lobsters are ready to scratch and teare the * Congre: the Congres again do as much for the Polype. *Nigidius* writeth, That the sea-Pike biteth off the Mullets taile: and yet the same fishes in certaine set moneths are good friends, and agree well enough. He saith moreouer, that those Mullets liue all, notwithstanding their tails be so curtold. On the other side, there be examples of friendship among fishes, besides those, of whose societie and fellowship I haue already written: and namely, between the great whale Balæna, and the little Musculus. For whereas the Whale aforesaid hath no vse of his eies (by reason of the heauy weight of his eie-browes that couer them) the other swimmeth before him, serueth him in stead of eies and lights, to shew when he is neere the shelues and shallowes, wherein he may be soone grounded, so big and huge he is.

Thus much of fish. Hence forward will we write of Foules.

* *Leuiathe Congre mentioned in Arist. lib. 8. cap. 2. hist. anim.*

THE TENTH BOOKE OF THE HISTORIE OF NATVRE, WRITTEN BY C. PLINIVS SECVNDVS.

Chap. I.

¶ *The nature of Birds and Foules.*

IT followeth now that we should discourse of the nature of Foules. And first to begin with Ostriches. They are the greatest of all other foules, and in manner of the nature of foure footed beasts: (namely, those in Africke and Æthiopia) for higher they be than a man sitting on horsebacke is from the ground: and as they be taller than the man, so are they swifter on foot than the very horse: for to this end only hath Nature giuen them wings, euen to help and set them forward in their running: for otherwise, neither flie they in the aire, ne yet so much as rise & mount from the ground. Clouen houfs they haue like red deere, and with them they fight; for good they be to catch vp stones withall, & with their legs they whurle them back as they run away, against those that chase them. A wonder this is in their nature, that whatsoeuer they eat (and great deuourers they be of all things, without difference and choise) they concoct and digest it. But the verie ft fooles they be of all others. For as high as the rest of their body is, yet if they thrust their head and necke once into any shrub or bush, and get it hidden, they thinke then they are safe enough, and that no man seeth them. Now two things they doe affoord, in recompence of mens pains that they take in hunting and chasing them: to wit, their egs, which are so big, that some vse them for vessels in the house: and their feathers so faire, that they serue for pennaches to adorne and set out their crests and morions of souldiers in the wars.

CHAP.

Chap. II.

¶ *Of the Phœnix.*

THe birds of Æthiopia and India, are for the most parr of diuerse colours, and such as a man is hardly able to decipher and describe, But the Phœnix of Arabia passes all others. Howbeit, I cannot tell what to make of him: and first of all, whether it be a tale or no, that there is neuer but one of them in all the world, & the same not commonly seen. By report he is as big as an Ægle: for colour, as yellow and bright as gold, (namely all about the necke;) the rest of the bodie a deep red purple: the taile azure blew, intermingled with feathers among of rose carnation color: and the head brauely adorned with a creft and penach finely wrought; hauing a tuft and plume thereupon, right faire and goodly to be seen. *Manilius*, the noble Romane Senatour, right excellently seene in the best kind of learning and litterature, and yet neuer taught by any, was the first man of the long Robe, who wrot of this bird at large, & most exquisitely He reporteth, that neuer man was known to see him feeding: that in Arabia he is held a sacred bird, dedicated vnto the Sun: that he liueth 660 yeares: and when he groweth old, and begins to decay, he builds himselfe with the twigs and branches of the Canell or Cinamon, and Frankincense trees: and when he hath filled it with all sort of sweet Aromaticall spices, yeeldeth vp his life thereupon. He saith moreouer, that of his bones and marrow there breedes at first as it were a little worme: which afterwards prooueth to be a prettie bird. And the first thing that this yong new Phœnix doth, is to perform the obsequies of the former Phœnix late deceased: to translate and cary away his whole nest into the citie of the Sun neere Panchea, and to bestow it full deuoutly there vpon the altar. The fame *Manilius* affirmeth, that the reuolution of the great yeare so much spoken of, agreeth just with the life of this bird: in which yeare the stars returne againe to their first points, and giue significations of times and seasons, as at the beginning and withall, that this yeare should begin at high noone that very day when the Sun entreth the signe *Aries*. And by his saying, the yeare of that reuolution was by him shewed, when *P. Licinius* and *M. Cornelius* were consuls, *Cornelius Valerianus* writeth, That whiles *Q. Plautius* and *Sex. Papinius* were Consuls, the Phœnix flew into Ægypt. Brought he was hither also to Rome in the time that *Claudius Cæsar* was Censor, to wit, in the eight hundreth yeare from the foundation of Rome: and shewed openly to be seen in a full hall and generall assembly of the people, as appeareth vpon the publick records: howbeit, no man euer made any doubt, but he was a counterfeit Phœnix, and no better.

Chap. III.

¶ *Of Ægles.*

OFall the birds which we know, the Ægles carie the price both for honor & strength. Six kinds there be of them. The first named of the Greeks * *Melanaetos*, and in Latin, *Valeria*: the least it is of all others, and strongest withall, blacke also of colour: In all the whole race of the Ægles, she alone nourisheth her yong birds: for the rest (as we shall hereafter declare) doe beat them away: she only crieth not, nor keepeth a grumbling and huzzing as others doe: and euermore converseth vpon the mountaines. Of the second sort is * *Pygargus*. It keepes about townes and plaines, and hath a whitish taile. The third is *Morphnos*, which *Homer* cals also *Percnos*: some name it *Plancus* and * *Anataria*: and she is for bignesse and strength, of a second degree: louing to liue about lakes and meeres. Ladie *Phœmonœ*, who was supposed & said to be the daughter of *Apollo*, hath reported, that this Ægle is toothed: otherwise mute, as not hauing any tongue: also, that of all other she is the blackest, and hath the longest tail. With her accord cordeth *Boethus* likewise. Subtle she is and wittie: for when she hath seazed vpon Tortoises and caught them vp with her tallons, she throweth them downe from aloft to breake their shells. And it was the fortune of the Poet *Æschylus* to die by such a meanes. For when he was foretold by wizards out of their learning, that it was his destinie to die on such a day by some thing falling on his head: he thinking to preuent that, got him forth that day into a great open plain, far from house or tree, presuming vpon the securitie of the cleare and open skie. Howbeit, an Ægle let fall a Tortoise, which light on his head, dasht out his braines, and laid him asleep for euer.

* *The Saker as some thinke.*

* *A kinde of Faulcon.*

For killing of Duckes and Mallards.

Of

Of the fourth knid is *Percnopterus*, the same that * *Oripelargus*, fashioned like to a Geire or Vulture: it hath least wings, a bodie bigger than the rest: but a very coward, fearfull & of a bastard and crauen kind, for a rauen will beat her. Besides, she hath a greedie and hungrie worm alwaies in her georg and craw, and neuer is content, but whining and grumbling. Of all Ægles she only carrieth away with her the dead prey, & feedes thereupon in the aire: wheras others haue no sooner killed, but they prey ouer them in the place. This bastard buzzard kind maketh that the fifth, (which is the roiall Ægle) & is called in Greek *Gnesios*, as one would say, true and kindly, as descended from the gentle and right airie of Ægles. This Ægle roial, is of a middle bignesse and of a reddish colour, a rare bird to be seene. There remaineth now the sixt and last sort, and that is * *Haliartos*. This Ægle hath the quickest and clearest eie of all other, soaring & mounting on high: when she spieth a fish in the sea, downe she comes with a power, plungeth into the water, and breaking the force thereof with her brest, quickly she catcheth vp the fish, and is gone. That Ægle which we named in the third place, haunting lakes, fens, and standing waters for to prey vpon water-foule, who, to shift from her, are driuen otherwhile to diue vnder the water: but she presseth so hard vpon them, that they be wearied and astonied in the end, and then she catcheth them vp and carieth them away. A worthy sport it is to see the maner of their scuffling: whiles the silly riuer bird makes means to gain the bank side for refuge (especially if it be well grown with reeds) and the Ægle for her part driues her from thence with the clap and stroke of the wing, whiles, I say, as the Egle striketh, and therewith plungeth her selfe down into the water, the poore fowle that swims vnderneath, seeing the shadow of the Egle houering about the bank side, riseth vp again in another place far enough off from the Egle, and where shee imagined she should be least looked for. Which is the cause that these wild fowle in the water commonly swim in flockes. For when they are many together they are not much troubled and annoied, by reason that with fluttering their pinnions, with dashing and flapping the water with their wings, they dazle the sight of their enemie. Oftentimes also the very Egles, not able to weld the prey that they haue seised on, are together with it drawne vnder the water, & so drowned. Now as touching the *Haliartos*, or the Osprey, she only before her little ones be feathered, will beat and strike them with her wings, and thereby force them to looke full against the sun beames: now if she see any one of them to winke, or their eies to water at the raies of the Sun, she turns it with the head forward out of the nest, as a bastard, and not right, nor none of hers; but bringeth vp and cherisheth that whose eye will abide the light of the Sun, as she looks directly vpon him. Moreouer, these Orfraies or Ospreies are not thought to be a seuerall kind of Egles by themselues, but to be mungrels, and ingendred of diuers sorts. And their young Orpraies be counted a kind of Ossifragi: from them come the lesser Geires; they again breed the greater, which ingender not at all. Some reckon yet another kind of Egle, which they cal Barbatæ; and the Tuscanes, Ossifrage.

But of the six kinds before rehearsed, the 3 first, and the fift, haue in their nest a stone found named * Ætites, which some call Gagates, and it is therein ingendred. This stone is medicinable, and singular good for many diseases, and if it be put into the fire it wil neuer a whit consume. Now this stone, as they say, is also with child: for if a man shake it, he shall heare another to rattle and sound within, as it were in the belly or wombe of it. But that vertue medicinable aboue said is not in these stones, if they be not stollen out of the very nest from the airie. Build they do and make their nests vpon rocks and trees. Three egs commonly they lay, whereof two only they vse to hatch: howbeit somtimes they haue bin seen to haue 3 yong ones. But lightly one of them they turn out of the nest, because they would not be troubled with feeding & nourishing it. And verily Nature hath wel prouided, that at such a time the old Egles should not be able to puruey sufficient for meat: for otherwise, if they should reare their birds, they were enough to destroy the yong breed of deere & wild beasts in a whole country, that there should be no venison nor game at all for gentlemen. Moreouer, by the same prouidence of Nature, all that while their tallons or clees hooke and turne inward very much: also for very hunger their feathers wax gray & white, so as they haue good cause not to abide their yong. But when they haue cast them off, the Ossifrages which are neere of kin vnto them, are ready to take them and bring them vp with their own birds. But the old Ægles their dammes not content therewith, persecute them still when they are growne to be bigge ones, beating and chasing them away farre off, as their very concurrents, and who would intercommune with them, and rob them of their

*The mountaine Storke.

*Some take it for the Ospray

*The pretious stone Ætites.

their prey. And were it not so, certainly one airie of Egles needs the reach of a whole country to furnish them with venison sufficient to their full. They haue therefore their seuerall coasts and walks, and without those limits and vsuall haunts they rauen not. When they haue seised of any prey, they carry it not away presently, but first lay it downe, peruse and peise the weight of it, and then away they fly therewith amaine, but not before. They die not for age, nor vpon any sicknesse, but of very famine, by reason that the vpper beake of their bil is so far ouergrown and turns inward so much, that they are not able to open it to feed themselues. Their maner is ordinarily to go to their busines (namely to fly and seek their prey) after noon: for all the forenoon they are perched vp, doing nothing, waiting the time when men be not stirring abroad, but about their markets within the cities and townes, or otherwise busie in their ciuil affaires. The quils or feathers of Egles laid among those of other foules, will deuour & consume them. Men say, that of all flying Fowle the Egle onely is not smitten nor killed with lightening: whereupon folke are wont to say, that shee serues *Iupiter* in place of his squire or armor-bearer.

Chap. IV.

¶ *When Egles began to be the Ensignes and standards of the Roman legions: and what fowles they be that war with Egles.*

Caius Marius in his second Consulship ordained, that the legions of Romane soldiers only should haue the Egle for their standard, and no other ensigne: for before-time the Egle marched formost indeed, but in a ranke of foure others, to wit, of * Wolues, Minotaures, Horses, and Bores, which were borne each one before their own seuerall squadrons and companies. Not many yeares past, the standard of the Egle alone began to be aduanced into the field to battell, and the rest of the ensignes were left behind in the campe: but *Marius* reiected them altogether, and had no vse of them at all. And euer since this is obserued ordinarily, that there was no standing campe or leaguer wintered at any time without a paire of Egle standards.

*Names of Ensignes.

Of Egles, the first and second kind prey not only vpon the lesse foure footed beasts, but also maintain battell with the red Deere, euen the stag and the hind. The maner of the Egle is, after she hath wallowed in the dust, and gathered a deale thereof among her feathers, to settle vpon the horns of the Deere aforesaid, to shake the same off into his eies, to flap and beat him about the face with his wings, vntill she driue him among the rocks, and there force him to fall down from thence headlong, and so to breake his neck. Moreouer, the Egle hath not enough of this one enemie, but she must war with the dragon also; howbeit the fight betweene them is more sharp and eager, yea, and putteth her to much more danger, albeit otherwhiles they combat in the aire. The Dragon of a naturall spight and greedy desire to do mischiefe to the Eagle, watcheth euermore where the airie is, for to destroy the egs, and so the race of the Egles. The Eagle again whersoeuer she can set an eye vpon him, catcheth him vp and carieth him away: but the serpent with his taile windeth about his wings, and so intangleth and tieth them fast, that downe they fall both of them together.

Chap. V.

¶ *A strange and wonderfull accident of an Egle.*

There hapned a maruellous example about the city Sestos, of an Egle: for which in those parts there goes a great name of an Egle, and highly is she honored there. A yong maid had brought vp a yong Egle by hand: the Egle again to requite her kindnes, would first when shee was but little, flie abroad a birding, and euer bring part of that shee had gotten vnto her said nurse. In processe of time, being grown bigger and stronger, would set vpon wild beasts also in the forrest, and furnish her yong mistresse continually with store of venison. At length it fortuned that the damosell died: and when her funerall fire was set a burning, the Egle flew into the mids of it, and there was consumed into ashes with the corps of the said virgin. For which cause and in memoriall thereof, the inhabitants of Sestos and the parts there adioyning, erected in that very place a stately monument, such as they cal Heroum, dedicated in the name of *Iupiter* and the virgin, for that the Egle is a bird consecrated vnto that god.

CHAP.

Chap. VI.

¶ *Of Vultures or Geires.*

THe blacke Vultures are the beſt of that kind. No man euer could meet with their neſts: whereupon ſome haue thought, but vntruly, that they fly vnto vs out of another world, euen from the Antipodes, who are oppoſite vnto vs. But the very truth is, they build in the higheſt rocks they can find, and their yong ones haue many times bin ſeene, two together, and no more. *Vmbricius*, who was counted the moſt skilfull Aruſpex of our age, ſaith, they vſually lay three egs, whereof they take one of them to ſacre and bleſſe (as it were) the other eggs and the neſt, and then ſoon after they caſt it away. Alſo that the maner of the Geires is to foreſee a carnage, and to fly two or three daies before vnto the place where there wil be any carions or dead carkaſſes.

Chap. VII.

¶ *Of the Sangualis and Immuſſulus.*

AS touching the Sangualis and the Immuſſulus, our Augurs at Rome are in a great doubt and make much queſtion, what they ſhould be. Some are of opinion, that the Immuſſulus is the chicke of the Vulture; and the Sangualis likewiſe the yong Oſſifraga. *Maſſurius* ſaith, that the Sangualis and Oſſifraga be both one: and as for the Immuſſulus, it is the yong bird of the Egle before it come to haue a white taile. Some haue affirmed confidently, that after the death of *Mutius* the Augure there was neuer any of them ſeen at Rome. But I rather am of this mind (and me thinkes it ſounds more like a truth) ſuch is the ſupine negligence and careleſneſſe of men in all things elſe, that no maruell it is if they know them not although they ſee them.

Chap. VIII.

¶ *Of Hawkes.*

WE find in Faulconrie 16 kinds of Hawks or Fowles that prey. Of which the Circos (which is lame and limpeth of one leg) was held in antient time for the luckieſt Augurie in caſe of weddings and of eattell. Alſo the Hawke called Triorches (of three ſtones or cullions that it hath) is reputed a bird of good preſage: and in Auguric, lady *Phemonoe* hath giuen vnto it the honor of the beſt ſimply and moſt fortunate. The Romans call it Buteo, *i.* a Buzzard; and there is a worſhipfull houſe and family in Rome of that ſyrname, by occaſion that a Buzzard ſetled and perched himſelfe vpon the Admirall ſhip where *Fabius* himſelfe, one of that houſe, was, preſaging a boone-voyage and happy ſucceſſe, according as it fell out indeed. As for the Hauk which the Greeks name Æſalo, *i.* the Merlin, ſhe alone is euer ſeen at all times of the yeare, whereas the reſt are gon when winter commeth. In generall, Hawks are diuided into ſundry and diſtinct kinds, by their greedineſſe more or leſſe, and their manner in chaſe and preying: for ſome there be that neuer ſeiſe on a foule but vpon the ground: others againe neuer aſſaile any birds, but when they ſpy them flying about ſome tree. There be alſo, that take a bird perching and ſitting on high: and ye ſhal haue of them that ouertake them as they fly in the wide and open aire. The doues therefore and pigeons, knowing the danger of flying aloft, ſo ſoon as they eſpy them, either light vpon the ground and ſettle, or elſe fly neere the earth, and thus help themſelues by taking a contrarie courſe to the Hawks nature, to auoid their talons. There is in the ocean of Africke an Iſland called Cerne, wherein all the hawks of the coaſts of the Maſſeſyli, build vpon the very ground, and there breed, and be ſo accuſtomed to thoſe countries, you ſhall not find an airie of them elſewhere. In a part of Thrace, ſomewhat higher in the country beyond Amphipolis, men and hawks ioyn in fellowſhip and catch birds together; for the men driue the woods, beat the buſhes and reeds to ſpring the fowle; then the hawks flying ouer their heads, ſeiſe vpon them, and either ſtrike or beat them to the ground fit for their hands. On the other ſide, the hawkers and fowlers when they haue caught the Fowle, diuide the booty with the hawks; and by report they let ſuch birds fly againe at libertie aloft into

into the aire, and then are the hawkes ready to catch them for themſelues. Moreouer, when the time is of hawking, they will by their manner of crie and flying together, giue ſigne to the faulconers that there is good game abroad, and ſo draw them forth to hawking for to take the opportunitie. It is ſaid, that the wolues doe the like, about the lake Mœotis: for vnleſſe they may haue their part with the fiſhers, they will rend and teare their nets, when they find them ſtretched forth. Faulcons or Hawkes willingly eat not the heart of any bird. There is an hawke called Cymindis, which preyeth in the night: ſeldome is ſhe ſeene in the woods, and by day-light ſeeth little or nothing. There is deadly war between it and the Ægle; and oftentimes they be both taken, entangled one with another.

Chap. IX.

¶ *Of the Cuckow, which vſually is killed by birds of her owne kind.*

AS touching the Cuckow, it ſeemes that he comes of ſome hawke changed into his ſhape at one certaine time of the yeare: for then thoſe other hawkes are not to be ſeene, vnleſſe ſome very few daies. He ſheweth himſelfe alſo but for a ſmall ſeaſon in ſummer time, and afterwards appeareth no more. It is the only hawke that hath no talons hooked downward, neither is he headed as other hawkes, nor like vnto them, but in colour: and for bill, he reſembleth rather the doue. Nay more than that, the hawke will prey vpon him and deuoure him, if haply they be ſeen both together: and it is the only bird of all other that is killed by thoſe of the own kind. He altereth his voice alſo. In the ſpring, he commeth abroad, and by the beginning of the dog-daies, hides himſelfe. Theſe lay alwaies in other birds neaſts, and moſt of all in the Stock-doues, commonly one egge and no more (which no other bird doth beſides) and ſeldom twain. The reaſon why they would haue other birds to ſit vpon their eggs and hatch them, is becauſe they know how all birds hate them: for euen the very little birds are readie to war with them: for feare therefore that the whole race of them ſhould be vtterly be deſtroied by the furie of others of the ſame kind, they make no neſt of their owne (being otherwiſe timorous and fearefull naturally of themſelues) and ſo are forced by this craftie ſhift to auoid the danger. The Titling therefore that ſitteth, being thus deceiued, hatcheth the egge & bringeth vp the chick of another bird. And this yong Cuckow being greedy by kind, beguiling the other yong birds and intercepting the meat from them, groweth hereby fat and faire-liking: whereby it comes into ſpeciall grace and fauour with the dam of the reſt, and nource to it. She joieth to ſee ſo goodly a bird toward: and wonders at her ſelfe that ſhe hath hatched & reared ſo trim a chick. The reſt, which are her owne indeed, ſhe ſets no ſtore by, as if they were changelings: but in regard of that one, counteth them all baſtards and misbegotten: yea, and ſuffereth them to be eaten and deuoured of the other euen before her face: and this ſhe doth ſo long, vntill the yong cuckow being once fledge & readie to flie abroad, is ſo bold as to ſeize on the old Titling and to eat her vp that hatched her. And by that time there is not another bird againe for goodneſſe and ſweetneſſe of meat, comparable to the yong Cuckow.

Chap. X.

¶ *Of Gleedes, Kites, or Puttocks.*

THe Kites or Gleeds are of the ſame kind of Hawkes or birds of prey, only they be greater. This hath been noted & obſerued in them: that being a moſt rauenous bird, & euermore hungrie, yet were they neuer knowne to ſnatch any viands ordained at funerall feaſts for the dead, out of the platters; ne yet the fleſh of beaſts ſlaine in ſacrifice, from off the altar of *Iupiter* in Olympia. Nay, it was neuer ſeen that a Puttocke would catch fleſh out of their hands that ſerued at ſuch feaſts: but if it did, a great preſage it was of ſome dolefull & heauie misfortune which ſhould fall vpon the whole town, that made theſe ſolemne ſacrifices. Theſe Gleeds or Puttocks, ſeem by the winding and turning of their tails to & fro as they flie, to haue taught pilots the skil of ſteering, and vſe of the helme. See how Nature hath ſhewed that in the aire aboue, which is ſo neceſſary in the deep ſea beneath! Kites likewiſe are not often ſeen abroad in the dead time of winter: yet go they not away for altogether before the Swallows. Moreouer, it is ſaid, that after the Sunſteds, alway in ſummer, they be troubled with the gout in their feet.

CHAP.

Chap. XI.

¶ *A generall diuision of Foules.*

THe first & principall difference and distinction in birds, is taken from their feet: for they haue either hooked tallons, as Hawkes; or round long clawes, as Hennes; or else they be broad, flat, and whole-footed, as Geese and all the sort in manner of water-foule. Those that haue hooked tallons, for the most part feed vpon flesh and nothing else.

Chap. XII.

¶ *Of vnluckie birds, and namely, the Crow, Rauen, and Scritch-owle.*

THe Crow liueth not altogether of carion, for the Rooke eateth of other food. The Crows and Rookes haue a cast by themselues: for when they meet with an hard nut which they be not able to cracke, nor breake their shales with their bills, they will flie aloft and fling it against some rock or tile house once or twice, yea & many times together, till it be so crushed and bruised, that they may easily breake it quite, and then they eat vp the kernell. These birds all of them keep much prattling and are full of chat; which most men take for an vnluckie sign and presage of ill fortune: although some there be who think otherwise, that it is a good bird, and highly esteem of her. Obserued it is, that from the going down or occultation of the starre Arcturus, vnto the comming of the Swallow, the Crow is not to be seene else-where but about the groues and temples of *Minerua* (and that is but very seldome) and namely, neere to Athens. Moreouer, this bird only feedeth her yong cadowes for a good while after they are able to flie. She is most vnluckie at breeding time and cooning, that is to say, after the Sunsted in summer. All other birds, which be as it were of the same race, driue their yong ones out of the nest when they be once fledge, and put them to it, forcing them to flie abroad: like as the Rauens also, who likewise feed not on flesh only: and they likewise when they perceiue their yong, once to be strong, chase and driue them away farre off. Therefore about little villages and hamlets, there commonly be not aboue two paire of them at once. And about Cranon verily in Thessalie, yee shall neuer see aboue one paire of them: for the old ones giue place to the yong, and fly away. There are some diuers and different properties in this bird, and that before-named: for the Rauens engender before the Sunsted, and for sixtie daies are somwhat ill at ease, and troubled with a kind of drought or thirstines especially, till such time as the figges be ripe in Autumne: and then from that time forward, the Crow beginneth to be diseased and sick. Rauens for the most part lay fiue egges: and the common sort are of opinion, that they conceiue and engender at the bill, or lay their egges by it: and therefore if women great with child chance to eat a Rauens egge, they shall be deliuered of their children at the mouth: and generally shall haue hard labour, if such an egge be but brought into the house where such a great bellied woman be. *Aristotle* denies this, and saith, that the Rauens conceiue by the mouth, no more than the Ægyptian Ibis: and he affirmeth, that it is nothing else but a wantonnesse which they haue in billing and kissing one another, which we see them to doe oftentimes; like as the Doues and Pigeons also. The Rauens of all other foules, seeme to haue a knowledge of their owne significations in presages and fore-tokens: for when the mercinarie hired souldiers of Media were all massacred vnder a colour of entertainment and hospitalitie, the Rauens flew all away out of Peloponnesus and the region of Attica. The worst token of ill lucke that they giue, is when in their crying they seeme to swallow in their voice as though they were choked.

The night birds haue also crooked tallons, as the Owles, Scritch-Owle, & Howlets. All these see but badly in the day time. The Scritch-Owle alwaies betokeneth some heauie newes and is most execrable and accursed, and namely, in the presages of publick affaires: he keepeth euer in desarts: and loueth not only such vnpeopled places, but also that are horrible and hard of accesse. In summe, he is the very monster of the night, neither crying nor singing out cleare, but vttering a certaine heauy groane of dolefull mourning. And therefore if he be seen to fly either within cities, or otherwise abroad in any place, it is not for good, but prognosticates some fearfull misfortune. Howbeit I my selfe know, that he hath sitten vpon many houses of priuat men, and

and yet no deadly accident followed thereupon. He neuer flieth directly at ease, as hee would himselfe, but euermore sidelong or byas, as if he were carried away with the wind or somewhat else. There fortuned one of them to enter the very secret sanctuarie within the Capitoll at Rome, in that yeare when *Sex. Papellio Ister*, and *L. Pedanius* were Consuls: whereupon at the Nones of March, the city of Rome that yeare made generall processions to appease the wrath of the gods, and was solemnly purged by sacrifices.

Chap. XIII.

¶ *Of the bird Incendiaria.*

THis fire-bird Incendiaria is likewise vnlucky, and as our Chronicles and Annals doe witnesse, in regard of her the city of Rome many a time hath made solemne supplications to pacifie the gods, and to auert their displeasure by her portended. As for example, when *L. Cassius* and *C. Marius* were Consuls: in that very yeare when by occasion of a Scritch-Owle seene, the city likewise was purged by sacrifice, as is aboue said, and the people fell to their prayers & deuotions. But what bird this should be, neither do I know, nor yet finde in any writer. Some giue this interpretation of *Incendiaria*, to be any bird whatsoeuer, which hath beene seene carying fire either from altar or chappell of the gods. Others call this bird Spinturnix. But hitherto I haue not found any man that would say directly, That hee knew what bird this should be.

Chap. XIV.

¶ *Of the bird Cliuina or Cluina.*

LIkewise the bird named in old time Clivina, or Cluina, which some call Clamatoria, and which *Labeo* describeth by the name of Prohibitoria, I see is as little known as the other. *Nigidius* also maketh mention of a bird called Subis, which vseth to squash Egles egs.

Chap. XV.

¶ *Of other vnknowne Birds.*

IN the Augures bookes which the Tuscanes haue composed, there be many birds described and set out in their colours, which haue not been seene some hundreds of yeares past. And I muse and maruell much, that they should be now extinct, and the race of them cleane gone, considering that the kind of those fowles is not lost, but continueth still in great aboundance, which men eat daily at their tables, and consume so ordinarily.

Chap. XVI.

¶ *Of night-flying Birds.*

OF strangers and forrein writers, *Hylas* is thought to haue written best and most learnedly as touching Auguries and the nature of birds. He reports in his book, that the Howlet, Scritch-owle, the Spight that pecketh holes in trees, the Trogone, and the Chough or Crow, when they be hatched come forth of their shels with their taile first: and that by reason of their heads so heauy, the egs are turned with the wrong end downward, & so the hinder part of the body lieth next vnder the henne or the dam, to sit vpon and cherish with the heat of her body.

Chap. XVII.

¶ *Of Owles or Howlets.*

IT is a pretty sight to see the wit and dexteritie of these Howlets when they fight with other birds: for when they are ouerlaid and beset with a multitude of them, they lie vpon their backs, and with their feet make shift to resist them: for gathering themselues into a narrow compasse, there is nothing in a maner to be seen of them, saue only their bill and talons, which couer the whole body. The Faulcon, by a secret instinct and societie of nature, seeing the poore Howlet thus distressed, commeth to succor and taketh equal part with him, and so endeth the

fray. *Nigidius* writeth, that Howlets for sixty daies in winter, keepe close and remain in couert, G and that they change their voice into nine tunes.

Chap. XVIII.

¶ *Of the Spight or Woodpecker.*

SOme little birds there are also that haue hooked clees, as the Spights, which are known by the firname of Martius, and be therefore called Pici Martij. These are of great account in Auspices and presage good. They that job and pecke holes in trees, and will climbe vp-right like cats, are of this race. As for them, they will rampe vp with their bellies to the tree, bending backward, & when they peck with their bils against the bark, they know by the sound H thereof, that there be worms within for them to feed vpon. These birds alone of all others feed and nourish their yong ones in crannies and chinks of trees. And if it chance that a shepheard or some such do pin or wedge vp their holes, it is thought commonly that they will vnstop the same again by meanes of a certaine herbe, which no sooner they touch the stopple with but it will out. *Trebius* writeth, that let a man driue a spike or great naile, or else a wedge or pinne of wood, as hard as euer he will, into that tree wherein this bird hath a nest, incontinently as shee percheth and setleth vpon the tree, it will presently fly out with such a force, that the tree will giue a crack again therewith. Throughout all Latium these birds beare the name for effectual signification of good or bad fortune, by reason of that king or prince [i. *Picus*] who gaue them that name. And one presage of theirs aboue the rest I cannot passe ouer: It fortuned that one of I them light vpon the head of *L. Tubero* L. chiefe Iustice of the city of Rome, as hee was sitting vpon the iudgement seat in the open face of the Court ministring justice, and there rested so gently, that it suffered him to take it with his hand. The Soothsayer being asked his aduice in this case, answered by booke, That if the bird were let go, it would portend the ruine and ouer-throw of the whole state and empire: but if it were killed, it denounced the death of the sayd Pretor or L. chiefe Iustice then in place. But the Pretor *Tubero* immediatly vpon this answer, plucked the bird in pieces. It was not long after but the presage of this bird took effect indeed, and was fulfilled in his person. Moreouer there be of this kind many that feed on mast, acorns, K nuts, apples, and such like fruits; but they be such as liue in maner vpon flesh onely. And yet I must except the Kite, for that propertie in him is noted to be in all Augurie an vnlucky signe, and presage of some heauy and deadly misfortune.

Chap. XIX.

¶ *Of Birds that haue hooked talons and round long clawes like fingers.*

WHat fowles soeuer haue crooked clawes sort not together in flocks, but prey each one apart for it self; and lightly all such fly aloft, vnlesse it be the night birds aforesaid: and the greater sort especially. They are all of them great winged, little bodied, and heauy in their gate vpon the ground. Seldom or neuer they sit and perch vpon a rock: for why, L their nails bowing and hooking inward will not giue them leaue. It remains now that we speak of the second kind or ranke of birds, which also is diuided into two sorts; to wit, Oscines that sing, and Alites that fly only: for the singing of the one and the bignes of the other makes the difference and distinction between them. These therefore that be greater bodied we wil by order treat first of.

Chap. XX.

¶ *Of Peacocks, and who was the first that killed them for the table.*

THe Peacock far surpasses all the rest of this kind, as well for beauty, as also for the wit and M vnderstanding that he hath; but principally for the pride and glory he takes in himself. For perceiuing at any time that he is praised and wel liked, he spreadeth his taile round, shewing and setting out his colours to the most, which shine againe like precious stones: and namely when he turnes them against the Sun, as his manner is; for so he giueth them a more radiant and glittering lustre. And for the same purpose also with his taile, representing fish shels,

A shels, he giues a certain shadow to the rest of his feathers, which seeme the brighter when they be a little shadowed: and withall, he sets all those eyes of his feathers together in a ranke, and gathereth them round, knowing full well that hee is the more looked on for them; and therein he taketh no small ioy and pleasure. On the other side, when he hath lost this taile, which vsually he moulteth euery yere when trees shed their leaues, vntil such time as trees blossom new, and his taile be grown again, he hath no delight to come abroad, but as if he were ashamed, or mourned, seeketh corners to hide himselfe in. The Peacocke ordinarily liueth 25 yeares. At 3 yeres of age he begins to put forth that varietie of colours in his feathers. Authors who haue written of him say, that he is not only a proud and vainglorious creature, but also as malicious B and spightfull, as the Goose is bashfull and modest: for so haue some of them obserued these properties and qualities in these birds. But I for my part like not to make such similitudes.

The first that killed Peacocks to be serued vp as a dish at the table, was *Hortensius* that great Orator, in that solemne feast which he made when he was consecrated high priest: and *M. Aufidius Lurco* deuised first to feed them fat: by which inuention of his, he might dispend by yerely reuenue, 60000 Sesterces. And this was about the time of the last Pirats war. 468 lib. 15. ſo.

Chap. XXI.

¶ *Of Cocks, how they be cut and made Capons: also of a dunghill Cocke that spake.*

NExt to Peacocks, these birds about our houses which are our sentinels by night, & whom Nature hath created to breake men of their sleepe, to awaken and call them vp to their C work, haue also a fence and vnderstanding of glory; they loue (I say) to be praised, and are proud in their kind. Moreouer, they are Astronomers, and know the course of the stars, they diuide the day by their crowing, from 3 houres to 3 houres: when the Sun goeth to rest, they go to roost: and like sentinels they keepe the reliefe of the fourth watch in the camp: they call men vp to their carefull labour and trauell: they will not suffer the Sun to rise and steale vpon vs, but they giue vs warning of it: by their crowing they tell vs that the day is comming, and they foretell their crowing likewise, by clapping their sides with their wings. They are Commanders and rulers of their own kind, be they Hens or other Cocks; and in what house soeuer they be they will be masters and kings ouer them. This soueraignty is gootten by plain fight one with another, as if they knew, that naturally they had spurs, as weapons, giuen them about D their heeles, to try the quarrell: and many times the combat is so sharp and hot, that they kill one another ere they giue ouer. But if one of them happen to be conqueror, presently vpon victorie he croweth, and himselfe foundeth the triumph. He that is beaten makes no words, nor croweth at all, but hideth his head in silence; and yet neuertheleſſe it goeth against his stomack to yeeld the gantlet and giue the bucklers. Hardly can he brook to be vnder another: and not only these cocks of game, but the very common sort of the dunghill are as proud and high minded: ye shal see them to march stately, carying their neck bolt vpright, with a combe on their head like the crest of a soldiers helmet. And there is not a bird besides himself that so oft looketh aloft to the Sun and sky; and then vp goeth the taile and all, which he beares on high, turning backward again on the top like a hook. And hereupon it is, that marching thus proud-E ly as they do, the very Lions (which of all wilde beasts be most couragious) stand in feare and awe of them, and will not abide the sight of them.

Now of these Cocks, some of them are made for nothing els but war and fighting, and neuer are they well but in quarrels, brawles, and fraies; and these be cocks of kind: and the countries from whence they come are grown into name, being much renowned for their breed: as namely Rhodus and Tenagra in the first and highest degree. In a second ranke and place be those of Melos and Chalcis. Vnto these birds (for their worth & dignity) the purple robe at Rome, and all magistrats of state disdain not to giue honor. These be they, that by their *tripudium solistimum* [*i.* hearty feeding] obserued by the pullitiers, shew good successe. These rule our great rulers euery day: and there is not a mighty L. or state of Rome, that dare open or shut the dore of F his house, before he knowes the good pleasure of these fowles: and that which more is, the soueraigne magistrate in his majestie of the Roman empire, with the regall enfignes of rods and axes carried before him, neither sets forward nor reculeth backe without direction from these birds: they giue order to whole armies to aduance forth to battel, & again command them to

ſtay and keep within the camp. Theſe were they that gaue the ſignall, and foretold the iſſue of G
all thoſe famous foughten fields, whereby we haue atchieued all our victories throughout the
whole world: and in one word, theſe birds command thoſe great Commanders of all nations
vpon the earth, as acceptable to the gods in ſacrifice with their ſmal fibres & filaments of their
inwards, as the greateſt and fatteſt oxen that are killed for ſacrifice. Moreouer, their crowing
out of order, too ſoon before their houre, or too late, and namely in the euening, portendeth al-
ſo and preſageth ſomwhat by it ſelfe. For well known it is, that by their crowing at one time
all night long, they fore-ſignified to the Bœotians that noble victorie of theirs atchieued ouer
the Lacedæmonians. For this interpretation and coniecture was giuen thereupon of a fortunat
day, becauſe that bird neuer croweth if he be beaten or ouercome. If they be once carued and H
made capons they crow no more. And this feat is practiſed vpon them two manner of wayes;
namely, either by burning their loines toward their kidnies with a red hot yron, or elſe by cau-
ſerising their legs beneath, and their ſpurs, and then preſently applying a plaiſter vnto the ex-
ulcerate and bliſtered place, made of potters white clay or chalky earth: and being thus ſerued
they will ſooner feed and be fat. At Pergamus euery yeare there is a ſolemne ſhew exhibited
openly to the people, of Cocke-fighting, as if ſword-fencers were brought within the liſts to
fight at outterance. We finde in record among our Annales, that within the territorie of Ari-
minum, in that yeare when *Marcus Lepidus* and *Quintus Catulus* were Conſuls, there was a dung-
hill cocke did ſpeake: and it was about a ferme-houſe in the countrey belonging to one *Galeri-* I
us. But this hapned neuer but once, for ought that I could euer heare or learne.

Chap. XXII.

¶ *Of Geeſe, and who firſt eat the Gooſe liuer. Alſo of the leafe of a Gooſe of Comagena.*

THe Gooſe likewiſe is very vigilant and watchfull: witneſſe the Capitoll of Rome, which by the meanes of Geeſe was defended and ſaued: whereas at the ſame time, through the default of dogs (which ſhould haue giuen warning) all had like to haue bin loſt. Where- K
fore the firſt thing that the Cenſors do by vertue of their office, is to take order for the Geeſe
of the Capitol, and to appoint ſome one man of purpoſe to ſee vnto them that they haue meat
enough. Moreouer, they are ſaid to be giuen much to loue: for at Argos there was a Gooſe that
was wonderouſly inamoured of a faire boy named *Olenus*: as alſo of a damoſel whoſe name was
Glauce, who vſed to play on the lute before king *Ptolomæus*: and by report at the ſame time a
Ram made court vnto the ſaid wench, and was in loue with her. It may be credibly thought al-
ſo, that this creature hath ſome ſparks (as it were) of reaſon, vnderſtanding, and learning, for *La-*
eydes the Philoſopher had one of them about him, which would neuer leaue him night nor day, L
neither in the open ſtreet abroad, nor in priuat houſe at home; but would follow him euen to
his cloſe and ſecret baines where he vſed to bathe. But our countrimen and citiſens of Rome
(beleeue me) are wiſer now adaies, who know, forſooth, how to make a dainty diſh of their Li-
uer. For in thoſe Geeſe that are kept vp and cram'd fat in coup, the liuer grows to be exceeding
great; and when it is taken forth of the belly, it waxeth bigger ſtill, if it be ſteeped in milk and
ſweet mede together. Good cauſe therefore it is, that there be ſome queſtion and controuerſie
abour the firſt inuentor of this great good and ſingular commoditie to mankind: whether it
were *Scipio Metellus*, a man who lately was called to be Conſul: or *M. Seſtius*, who in thoſe daies
was by his birth a gentleman of Rome. But to leaue that ſtil vndecided, this is certainly known
that *Meſſalinus Cotta*, ſon to that *Meſſala* the Orator, found out the ſecret to broile & fry the flat
broad feet of Geeſe, and together with cocks combs, to make a ſauory diſh of meat thereof be- M
tween two platters. For ſurely I for my part will giue euery man his due and right, and will not
defraud them of their ſingular praiſe and honour who haue bin benefactors to the kitchen, and
proceeded maſters in cookerie. A maruellous thing of theſe birds, that a flock of them ſhould
come all the way bare foot, from * Terwin and Torney in France, as far as to Rome. Their or-
der was who had the conduct of them in this large voyage, to bring thoſe forward that were
weary and lagged behind, into the vaward & forefront: and ſo the reſt by a certain thick vnited
ſquadron (which naturally they make going together) driue the others before them. A ſecond
commo-

* Morinis

A commoditie that Geeſe yeeld, (eſpecially thoſe that be white) is their plume and downe. For in ſome places their ſoft feathers are pluckt twice a yeare: and yet they cary feathers again, and be as well couered with plume as before: and euermore the neerer to the skin and fleſh, the ſofter is the downe. But of all other, the fineſt and beſt is that which is brought out of Germanie. The Geeſe there, be all white; but leſſe of bodie than from other parts: and there they be called Ganzæ. And truly, a pound of ſuch feathers be worth * 5 deniers. Hereupon it is, that ſo many complaints are made of Colonels and Captaines ouer companies of auxiliarie ſouldiers for their diſorders. For whereas they ſhould keep them together in a ſtanding *corps de gard*, to watch and ward night and day: they licenſe many times whole bands to ſtraggle abroad, to hunt and chaſe Geeſe for their feathers and downe. And now forſooth the world is growne to be ſo deli-
B cate and daintie, that not only our fine ſmooth dames, but alſo our men, cannot take their re-poſe and ſleep without this ware, but complaine of a paine in their necks and heads, vnleſſe they may lay them vpon bolſters and pillowes of gooſe feathers, and their ſoft downe.

* *Plin. l. 8. c. 48.*

Now, to that part of Syria called Comagena, we are beholden for another proper inuention of theirs. They take me the leafe and greaſe of Geeſe and Cinnamon together, which they put into a brazen pot, and couer it all ouer with good ſtore of ſnow, wherein they let it lie in ſteepe, well infuſed in this cold humor, to vſe in that notable compoſition and ſweet ointment, which of that countrey is called Comagenum.

Of the Geeſe kind are the Birganders named Chelanopeces: and (than which there is not a daintier diſh knowne in England) the Chenerotes, leſſe than wild Geeſe.

As for the pheſant Buſtards, they haue a trim ſhining brightneſſe that becommeth and gra-
C ceth them exceeding well in their perfect and abſolute black hew: and their eie-browes painted red as it were with deep Scarlet.

Another kind there is of them, bigger than Vultures, but in feather and colour much reſembling them. And there is not a Foule (ſetting the Oſtrich aſide) that poiſeth & weigheth more heauy than they: for they grow to that bignes, that a man can hardly lift them from the ground. Theſe breed in the Alpes and the North countries. If they be mued vp and kept in a pen, they loſe their pleaſant taſte, and are no good meat: nay, they grow ſo ſullen and ſelf-willed, that they will die with holding their breath. Next to theſe are thoſe which in Spaine they cal the Slow-birds, and in Greece Otides: but their meat is naught: for the marow in their bones, if it be let
D run out, hath ſuch a ſtinking ſmell, that a man cannot abide it, but ſhall be readie to vomit.

Chap. XXIII.

¶ *Of Cranes, Storkes, Swans, Quailes, the Glotis, and ſtrange birds of other countries.*

THe nation of the prettie Pigmies enjoy a truce and ceſſation from armes, euery yeare (as we haue ſaid before) when the Cranes, who vſe to wage war with them, be once departed & come into our countries. And verily, if a man conſider well how far it is from hence to the Leuant ſea, it is a mightie great journey that they take, & their flight exceeding long. They put not themſelues in their journey, nor ſet forward without a counſell called before, and a generall
E conſent. They flie aloft, becauſe they would haue a better proſpect to ſee before them: and for this purpoſe a captain they chuſe to guide them, whom the reſt follow. In the rereward behind there be certaine of them ſet and diſpoſed to giue ſignall by their manner of crie, for to raunge orderly in rankes, and keep cloſe together in array: and this they doe by turnes each one in his courſe. They maintaine a ſet watch all the night long, and haue their ſentinels. Theſe ſtand on one foot, and hold a little ſtone within the other, which by falling from it, if they ſhould chance to ſleepe, might awaken them, and reproue them for their negligence. Whiles theſe watch, all the reſt ſleep, couching their heads vnder their wings: and one while they reſt on the one foot, and otherwhiles they ſhift to the other. The captaine beareth vp his head aloft into the aire, and
F giueth ſignall to the reſt what is to be done. Theſe Cranes if they be made tame and gentle, are very playfull and wanton birds: and they will one by one dance (as it were) and run the round with their long ſhankes ſtalking ful vntowardly. This is ſurely known, that when they mind to take a flight ouer the ſea Pontus, they will fly directly at the firſt to the narrow ſtreights of the ſayd ſea, lying between the two capes Criu-Metophon and Carambis, and then preſently they

ballaiſe themſelues with ſtones in their feet, and ſand in their throats, that they flie more ſteadie and endure the wind. When they be halfe way ouer, down they fling theſe ſtones: but when they are come to the continent, the ſand alſo they diſgorge out of their craw.

Cornelius Nepos, who died in the daies of *Auguſtus Cæſar* Emperor, in that chapter where he wrote, That a little before his time men began to feed and cram Blackbirds and Thruſhes in coupes, ſaith moreouer, That in his daies Storks were holden for a better diſh at the bourd than Cranes. And yet ſee, how in our age now, no man will touch a Storke if it be ſet before him vpon the bourd: but euery one is readie to reach vnto the Crane, and no diſh is in more requeſt. From whence theſe Storks ſhould come, or whither they go againe, is not yet known. No doubt from far remote countries they viſite vs, and in the ſame manner as the Cranes do: only this is the difference, that the cranes are our gueſts in Winter, and the Storks in Summer. When they be minded to part out of our coaſts, they aſſemble all together in one certain place appointed: there is not one left out nor abſent of their owne kind, vnleſſe it be ſome that are not at libertie, but captiue or in bondage. Thus (as if it had been publiſhed before by proclamation) they riſe all in one entire companie, and away they flie. And albeit well knowne it might be afore, that they were vpon their remoue and departure, yet was there neuer any man (watched he neuer ſo well) that could perceiue them in their flight: neither do we at any time ſee when they are coming to vs, before we know that they be alreadie come. The reaſon is, becauſe they doe the one and the other alwaies by night. And notwithſtanding that they flie too and fro from place to place, and make but one flight of it, yet be they ſuppoſed neuer to haue ariued at any coaſt but in the night. There is a place in the open plaines and champion countrey of Aſia, called Pithonos-Come: where (by report) they aſſemble all together, and being met, keepe a jangling one with another: but in the end, look which of them lagged behind and came tardie, him they reare in peeces, and then they depart. This alſo hath been noted, that after the Ides of Auguſt they be not lightly ſeene there.

Some affirme conſtantly, that Storkes haue no tongues. But ſo highly regarded they are for ſlaying of Serpents, that in Theſſalie it is accounted a capitall crime to kill a Storke, and by law he is puniſhed as a Fellon in the caſe of manſlaughter.

After the ſame maner wild Geeſe and Swans do ſort together, when they be paſſengers from countrey to countrey: but all theſe are ſeen when they flie. They make way forcibly in a pointed ſquadron, like as it were the ſtem of a foiſt at ſea, armed with a ſharp beakehead (for by this meanes they breake and cut the aire better, than if they draue it before with a ſtreight, euen, and ſquare front.) And thus wedg-wiſe by little and little they ſpread broader and broader behind, and beare a great length beſides with them: by which meanes alſo they gather more wind to heaue them vp and ſet them forward. In this their flight they reſt their heads vpon the former: and euer as one that leadeth the way is wearie with bearing his head, he retires behind to eaſe himſelf vpon him that flieth next before. Storks keep one neſt ſtil from yeare to yeare, and neuer change: and of this kind nature they are, that the yong will keep and feed their parents when they be old, as they themſelues were by them nouriſhed in the beginning.

Some ſay that the Swans ſing lamentably a little before their death, but vntruly, I ſuppoſe: for experience in many hath ſhewed the contrarie. Howbeit, theſe foules vſe to eat and deuour one another.

But ſince we are entred into this diſcourſe of thoſe foules that make voiages by whole flocks ouer ſea and land to ſee ſtrange countries, I canot put off to ſpeak of leſſer birds alſo, which are of the like nature. For thoſe beforenamed may ſeeme in ſome ſort to be induced to ſuch great trauell, ſo bigge they are of bodie, and ſo ſtrong withall. As touching Quailes therefore, they alwaies come before the Cranes depart. A little bird it is, and whiles ſhe is among vs here, mounteth not aloft in the aire, but rather flieth below neere the ground. The manner of their flying is like the former, in troupes: but not without ſome danger of the ſailers when they approch neer to land. For oftentimes they ſettle in great number on their ſailes, and there perch; which they doe euermore in the night, and with their poiſe beare downe barkes and ſmall veſſels, and finally ſinke them. Theſe Quailes haue their ſet gifts, to wit, ordinarie reſting and baiting places. When the Southwind blowes, they neuer flie: for why? it is a moiſt, heauy, and cloggie wind, & that they know well ynough. And yet they willingly chuſe a gale whenſoeuer they flie, by reaſon that their bodies are too weightie (in compariſon of their wings) to beare them

A them vp: and beſides, their ſtrength is but ſmall. And hereupon it is, that as they flie, they ſeem by their manner of crie to complaine, as though they flew with paine. Commonly therefore they chuſe a Northerne wind to flie with: and they haue one mighty great Quaile called Orygometra, to lead the way and conduct them, as their captain. The formoſt of them, as he approcheth neere to land, paieth toll for the reſt vnto the Hauke, who preſently for his welcome preieth vpon him. Whenſoeuer at any time they are vpon their remooue and departure out of theſe parts, they perſuade other birds to beare them company: and by their inducements, there go in their train the Glottis, * Otis, and the Cychramus. As for the Glottis, he putteth forth a long tongue, wherupon he hath that name. This bird is very forward at the firſt ſetting out (as
B being deſirous to be a traueller, to ſee far countries, and to change the aire:) and the firſt daies journy he vndertaketh with pleaſure: but ſoone finding the tedioufneſſe and paines in flying, he repents that euer he enterpriſed the voiage. To go backe againe without company, hee is aſhamed: and to come lag behind he is as loth: howbeit, for that day he holdeth out ſo ſo, and neuer goeth farther; for at the next reſting place that they come vnto, hee faire leaueth the company and ſtaieth there; where lightly he meeteth with ſuch another as himſelfe, who the yere before was left behind. And thus they do from time to time, yere by yere. As for the Cychramus, he is more ſtaid and reſolute to indure the trauel: he maketh haſt and hath an earneſt longing to come into thoſe parts which he ſo much deſires: & therfore in the night ſeaſon he is as good as a trumpet to awake the reſt, & put them in mind of their iourny. The Otis is a bird leſſe than
C the Like-Owle, bigger than the Howlet, hauing two plumed ears ſtanding vp aloft, whereupon he took that name Otis in Greek. But in Latine ſome haue called him Aſio. This bird beſides hath certain qualities by her ſelf, & is skilful to counterfeit and make geſtures like a flattering paraſite: ſhe can foot it, turn and trip, mount and capre, as if ſhe were a profeſſed dauncer: eaſie ſhe is to be taken like as the Howlet, for whiles ſhe is amuſed and looking wiſtly vpon one that goeth about her, another commeth behind and ſoon catcheth her. But to return to our Quailes aforeſaid. If a contrarie wind ſhould chance to ariſe and begin to driue againſt them, and hinder their flight: to preuent this inconuenience, they be well prouided. For they flie well ballaiſed either with ſmall weightie ſtones within their feet, or els with ſand ſtuffed in their craw: the ſeed or grain of the white Elebore (a very poiſon) they loue paſſing wel, & it is their beſt meat.
D But hereupon it is, that they are not ſerued vp as a diſh to the table. Moreouer, they are wont to ſome and ſlauer at the mouth, by reaſon of the falling ſickneſſe, vnto which they onely of all other creatures, but man again, are ſubiect.

* The Biſtard or Hora-gwle

CHAP. XXIV.

Of Swallowes, Ouſles, or Merles, Thruſhes, Stares or Sterlings, Turkies, and Stockedoues.

THe Swallowslikewiſe (the birds alone of all thoſe that haue not crooked claws, which feed vpon fleſh) are gone from vs all Winter time. Howbeit, they depart not far off, but ſeeke only the Sun-ſhine nookes, betweene hils neere at hand, and follow the warmth. Where many times they are found naked, and without feathers altogether, as if they had moulted. It is ſaid, that they wil neuer build their neſts vnder any houſe in Thebes: becauſe that city had bin many times forced and taken by the enemy. Neither in Bizia, a city of Thrace, by reaſon of the deteſtable parts practiſed by *Tereus* there. *Cecina* of Volaterræ, a Gentleman of Rome by calling (gouernour and maſter of the coaches and coach-horſes that vſed to runne for the priſe and beſt game) was wont to bring with him into the city, a number of theſe Swallowes, which he had gotten in diuers places where he came, out of his friends houſes wherin they were bred. And when the horſes which hee had in charge obtained at any time victorie in the race, hee would take the birds, and paint them with that colour which betokened victorie, and ſo with
F that liuerie (as it were) let them flie to his friends, for to carry tidings vnto them of the good ſucceſſe which hee had obtained: knowing right well, that euery one would home to the ſame neſt from whence they came. And thus in ſmall ſpace could hee enforme his conſorts and well-willers of his good ſpeed. Alſo *Fabius Pictor* reporteth in his Annales, That when a fort (which the Roman garriſon held) was beſieged by the Liguſtines; there was a ſhee Swallow newly taken out of her neſt within that fort, from her little ones as ſhee ſat ouer them, and

brought

brought to him with this watchword, That by a linnen thred tied to her foot in ſtead of a letter, he ſhould aduertiſe them within the fort, by ſo many knots tied in the ſaid thred, as there would daies paſſe before aid could come from him vnto them, to the end that they alſo might be ready vpon that day to fallie forth. G

Ouſſles, Throſtles, Blackbirds, and Stares, after the ſame manner depart aſide from vs, but go not far. Howbeit, theſe caſt not their feathers, nor lie altogether hidden: but are ſeen oftentimes in places, from whence they fetch meat to ſerue them in the Winter. And therefore it is, that Blackbirds are common in Germany, and ſpecially in Winter time.

The Turtle more properly and truly is ſaid to hide her ſelf, and to ſhed her plume & moult.

Stockdoues likewiſe depart from vs, but whether they go no man knoweth.

As touching Sterlings, it is the property of the whole kind of them to flie by troups, and in their flight to gather round into a ring or bal, whiles euery one of them hath a deſire to be in the middeſt. H

Of all birds, the Swallow alone flieth bias, and windeth in and out in his flight: he is moſt ſwift of wing, and flieth with eaſe: and therefore not ſo ready to be ſurpriſed and taken by other birds. To conclude, he neuer feedeth but flying, and ſo doth no other bird beſides.

Chap. XXV.

¶ *What birds continue with vs all the yeare long: which be halfe yeares birds, and which be but for three moneths.*

GReat difference there is in the ſeaſons and times of birds. Some abide the whole yeare, as houſe-doues: others halfe the yere, as Swallows: and ſome again but a quarter, as blackbirds and Turtle-doues. And there be againe that are gone ſo ſoone as they haue hatched and trained their young abroad into the open aire. Such be the Hu-holes, and Houpes [or Lapwings as ſome thinke.] I

Chap. XXVI.

¶ *Strange ſtories of birds.*

WRiters there be who affirme, That euery yeare certain birds come flying out of Ethyopia to Ilium, and there, about the tombe or ſepulchre of *Memnon*, skirmiſh and fight a battell. For which cauſe men call them Memnonides. And *Cremutius* auouchoth vpon his owne knowledge, That euery fifth yere the ſame birds do the like in Æthyopia, euen before the roiall palace ſomtime of the ſaid king *Memnon*. K

Semblably, the birds named Maleagrides, do fight a field in Bœotia. Now are theſe Meleagrides a kind of Turky-cocks, and hens of Affick, hauing a bunch on their back, and beſpotted with feathers of ſundry colours. Of all ſtrange birds, comming out of forreine parts, theſe are laſt receiued and admitted to ſerue the table, by reaſon of a certain harſh and vnpleaſant ſtrong taſte that they haue. But it is the monument and tombe of *Meleager* which hath giuen them that name and credit which they haue. L

Chap. XXVII.

¶ *Of birds ſyrnamed Seleucides.*

THe birds called Seleucides, come to ſuccour the inhabitants of the mountaine Caſius, againſt the Locuſts. For when they make great waſte in their corne and other fruits, *Iupiter* at the inſtant praiers and ſupplications of the people, ſendeth theſe fouls among them to deſtroy the ſaid Locuſts. But from whence they come, or whether they go again, no man knoweth: for neuer are they ſeene but vpon this occaſion, namely, when there is ſuch need of their helpe. M

Chap. XXVIII.

¶ *Of the bird Ibis.*

THe Ægyptians likewiſe haue recourſe in their prayers & inuocations to their birds named Ibis, what time as they be troubled and annoied with ſerpents comming among them: and in

A in like caſe the Eleans ſeeke vnto their god *Myiagros*, for to be rid of a multitude of flies which peſter them ſo, that they breed a peſtilence among them. But looke vpon what day they find that Idoll appeaſed and pacified by their ſacrifice, all the flies die forth-with.

Chap. XXIX.

¶ *What birds they be, which will not abide ſome places: alſo which be they that change colour and voice: and then of the Nightingale.*

B BVt that which wee ſhould haue ſaid when wee wrote of the departure and going aſide of birds: the Howlets alſo are reported to lie hidden ſome few daies. Moreouer, this is known for a truth, That in the Iſland Candy there be none at all of them: and in caſe that any one be thither brought, it will die there. A wonderful thing, that nature ſhould make difference of birds and other creatures in that reſpect. But ſure it is, ſhe hath not brought forth all creatures in al places, but hath priuiledged this country more than that: & denied that to one which ſhe hath giuen vnto another. And thus hath ſhee dealt not onely by fruits of the earth, trees, and plants, but alſo by liuing creatures. That in ſome parts this or that ſhould not grow or breed, is a thing commonly ſeen & known: but, that thoſe things ſhould die ſo ſoon as they are brought thither, is very ſtrange & wonderfull. What ſhould that be which is ſo contrary vnto one kind and no more, as that it will not ſuffer it to liue? What enuie is this of Nature, thus to hinder C the breeding or life of any creature? or why ſhould birds be reſtrained within any limits and bounds in the whole earth? And yet ſee! In all the Iſland of Rhodes a man ſhall not find one Airie of Ægles. In that tract of Italy beyond the Po, and neere vnto the Alpes, there is a lake which they call there Larius; the place about it is right pleaſant and delectable, enriched with goodly trees that beare fruit, and faire fields for paſturage: and yet a man ſhall neuer ſee any Stork to come thither, no nor within 8 miles of it. And yet in the neighbor quarters of the* Inſubrians neer adioyning, ye ſhall haue infinite and innumerable flocks and flights of choughes and jack-dawes: the verieſt theeues, nay the only theeues of all other birds, eſpecially for ſiluer and gold, that it is a wonder to ſee what meanes they will make to ſteale and filtch it. Men ſay that in the territory of Tarentum there be no wood-pecks or tree-jobbers. It is but of late daies D ſince that from the mountaine Apennine toward the city of Rome there haue been ſeen Pyannets with long tailes, party coloured and flacked, whereupon they be called Variæ: and yet ſuch are not common, but very geaſon to be found. Their property is to be bald euery yeare, what time as men ſow rapes or nauewes. The Patridges in the territory of Attica, flie not ouer into the marches of Bœotia. And there is not a bird within the compaſſe of the ſea Pontus, & namely, in the Iſland wherein *Achilles* was buried, that will paſſe beyond the temple conſecrated vnto him. In the territory of Fidenæ neer to Rome, Storkes build no neſts, neither ſhall a man find a yong Storke there. But into the parts about Volaterræ, there is not a yeare but one ſhall ſee a world of Stockdoues flying from beyond ſea. At Rome ye ſhall not haue a fly or dog that will enter into the chappell of *Hercules* ſtanding in the beaſt market. In a word, I could alledge ma- E ny ſuch like examples, which of purpoſe I paſſe ouer, becauſe I would not be tedious in my diſcourſes: ſeeing that *Theophraſtus* reports, how all the Doues, Peacocks, and Rauens, which are in Aſia, haue been brought thither from other parts: like as all the Frogs in Cyrenaica, which do erie, whereas their owne be mute all.

* Lumbardie

As for ſinging birds, this is another ſtrange and wondrous thing obſerued in them. For at certain times of the yere they change their colour in feathers, and alter their voice in ſinging: and that in ſuch ſort, as of a ſuddaine a man would ſay they were other birds. A thing that happeneth not to the great foules aboue-ſaid, ſaue only vnto Cranes: for they with age wax black. And to begin with the Merle or black-bird, which naturally is blacke, he turnes to be reddiſh. In Summer he ſingeth cleare and tunably, in winter he ſtutteth and ſtammereth: but about the F ſun-ſtead in December he is mute and dumbe altogether. After they be once a yere old, I mean the cockes or males onely of that kinde, their bils turne to be white like yuorie. The Throſtles or Mauiſſes all Summer be painted about the necke with ſundry colours, but in Winter they be all of a colour.

The Nightingale for fifteene daies and nights together, neuer giueth ouer but chaunteth continually, namely, at that time as the trees begin to put out their leaues thicke. And ſurely this

this bird is not to be set in the last place of those that deserue admiration: for is it not a wonder G
that so loud and cleare a voice should come from so little a body? Is it not as strange that shee
should hold her wind so long, and continue with it as she doth? Moreouer, she alone in her song
keepeth time and measure truly; she riseth and falleth in her note just with the rules of Musick
and perfect harmony; for one while, in one entire breath she drawes out her tune at length trea-
table; another while she quauereth, and goeth away as fast in her running points: sometime she
maketh stops and short cuts in her notes, another time she gathereth in her winde and singeth
descant between the plain song: she fetcheth her breath againe, and then you shall haue her in
her catches and diuisions: anon all on a sudden, before a man would thinke it, she drowneth
her voice, that one can scarce heare her: now and then she seemeth to record to her selfe; and
then she breaketh out to sing voluntarie. In sum, she varieth and altereth her voice to all keies: H
one while, ful of her largs, longs, briefs, semibriefs, and minims; another while in her crotchets,
quauers, semiquauers, and double semiquauers: for at one time you shall heare her voice ful of
loud, another time as low; and anon shrill and on high: thick and short when she list; drawn out
at leisure againe when she is disposed: and then (if she be so pleased) shee riseth and mounteth
vp aloft, as it were with a wind-organ. Thus she altereth from one to another, & sings all parts,
the Treble, the Mean, and the Base. To conclude, there is not a pipe or instrument againe in the
world (deuised with all the art and cunning of man so exquisitely as possibly might be) that can
affoord more musick than this pretty bird doth out of that little throat of hers. So as no doubt
there was fore-signified most excellent and melodious musicke, by an excellent presage of a
nightingale which setled vpon the mouth of *Stesichorus* the Poet, and there sung full sweetly: I
who afterwards proued to be one of the most rare and admirable musitians that euer was. And
that no man should make a doubt that there is great Art and cunning herein, do but marke, how
there is not one Nightingale but hath many notes and tunes. Againe, all of them haue not the
same, but euery one a speciall kind of Musick by her selfe: nay, they striue who can do best, and
one laboreth to excell another in varietie of song and long continuance: yea, and euident it is,
that they contend in good earnest with all their will and power: for oftentimes shee that hath
the worse and is not able to hold out with another, dieth for it, and sooner giueth she vp her vi-
tall breath, than giueth ouer her song. Ye shall haue the yong Nightingales studie and medi-
tate how to sing, by themselues; ye shal haue them listen attentiuely to the old birds when they K
sing, and to take out lessons as it were from them, whom they would seeme to imitate staffe by
staffe. The scholler when she hath giuen good eare vnto her mistresse, presently rehearseth what
she hath heard; and both of them keep silence for a time in their turns. A man shall euidently
perceiue when the yong bird hath learned well, & when again it must be taught how to correct
and amend wherein it did amisse; yea, and how the teacher will seeme to reproue and finde a
fault; no maruell therfore if one of these Nightingales carrie the price (in the market) of a bond-
slaue; yea and a higher too, than a man might in old time haue bought a good page & harnesse-
bearer. I my selfe haue knowne one of them (mary it was white, which was a rare thing and not
commonly seen) to haue bin sold for 6000 Sesterces, for to be giuen as a Present vnto the Em-
presse *Agrippina*, wife of *Claudius Cæsar* late Emperor of Rome. And now of late we haue known L
many of them taught to begin to sing, only when a man would haue them: and keepe their re-
sponds in course after others, in good consent and harmony. As also there haue bin found men,
who by a deuise of a reed or cane had out of the water, put crosse ouerthwart their mouth, and
by putting their tongue into an hole made of purpose in it, and blowing withal, could counter-
feit the Nightingale so perfectly, that one might not discern and distinguish the one from the
other. Well, these little Nightingales, so great chanters as they be, so cunning and full of their
conceits, after 15 daies begin to abate and slack their musick; yet so, as a man cannot say, they
were either wearie, or satisfied with singing: for soone after, when the weather groweth hotter,
their voice is cleane altered: for neither are they musicall and tuneable in their measures with
varietie as before, but only sing plain song and keep them to one tune. And more than so, they M
change their colour in processe of time: and last of all, when winter comes, be no more seene.
Tongued they are not like other birds, with a thin tip before. They begin to breed with the first
in the prime of the Spring, and commonly lay six egs.

The Gnatsnapper, Ficedula, a bird somwhat like vnto the Nightingale, doth otherwise: for
at one time it changeth both colour, form, and song. They haue not that name Ficedulæ pro-
perly

A perly but in the Autumne, as one would say, fig-feeders: for when that season is once past, they
be called Melancoryphi, *i.* Black-heads.

In like sort, the bird which is named Erithacus (*i.* Robin, or Redbrest) in winter; the same is
Phœnicurus [*i.* Red-taile] all summer long.

The Houpe or Vpupa (as *Æschilus* the Poet saith) changeth also her hew, voice, and shape.
This is a * nasty and filthy bird otherwise, both in the manner of feeding, and also in nestling: * Foras *Arist.* reporteth, it nestleth in mans doung.
but a goodly faire crest or comb it hath, that will easily fold and be plaited: for one while shee
will draw it in, another while set it stiffe vpright along the head.

As for the bird Oenanthe, it also for certain daies lieth close and vnseen; & namely, when the
Dog-star ariseth, it is hidden: but after the occultation therof, commeth abroad & sheweth her
selfe: a strange thing, that in those daies it should do both. Last of all, the * Witwall or Larior, * Chlorion.
B which is all ouer yellow, being not seen all winter time, appeareth about the Sun-steads.

Chap. XXX.

¶ *Of the Merles.*

ABout Cyllene in Arcadia, and no where els, ye shall find white Merles or Ousles. And Ibis;
about Peluſium only in Egypt, is blacke; in all places else of Ægypt, white.

Chap. XXXI.

¶ *The kind of birds breeding and hatching.*

C ALl singing birds, saue only those that are excepted before, lightly breed not nor lay their
egs before the spring Æquinoctiall in mid-March, or after the Autumnall, in mid-Sep-
tember. And those that they hatch before the Summer Sunstead (*i.* Mid-Iune) hardly
come to any perfection: but after that time, they do well enough and liue.

Chap. XXXII.

¶ *Of the Halcyones, or Kings-fishers: and the daies good for nauigation which they shew. Of the Sea-guls and Cormorants.*

D AND in this regard especially, namely for breeding after the summer Sunstead, the Halcy-
ones are of great name and much marked. The very seas, and they that saile thercupon,
know well when they sit and breed. This very bird so notable, is little bigger than a spar-
row: for the more part of her pennage, blew, intermingled yet among with white and purple fea-
thers, hauing a thin smal neck and long withall. There is a second kind of them breeding about
the sea side, differing both in quantitie and also in voice; for it singeth not as the former doe
which are lesser, for they haunt riuers, & sing among the flags & reeds. It is a very great chance
to see one of these Halcyones, & neuer are they seen but about the setting of the star Virgiliæ,
[*i.* the Brood-hen:] or els neere Mid-summer or Mid-winter: for otherwhiles they will flie a-
bout a ship, but soone are they gone againe and hidden. They lay and sit about Mid-winter
when daies be shortest: & the time whiles they are broody, is called the Halcyon daies: for du-
E ring that season, the sea is calme and nauigable, especially in the coast of Sicilie. In other ports
also the sea is not so boisterous, but more quiet than at other times: but surely the Sicilian sea
is very gentle, both in the Streights and also in the open Ocean. Now about seuen daies before
Mid-winter, that is to say, in the beginning of December, they build; and within as many after
they haue hatched. Their nests are wonderously made, in fashion of a round ball: the mouth or
entrie thereof standeth somwhat out and is very narrow, much like vnto great spunges. A man
cannot cut and pierce their nest, with sword or hatchet; but breake they wil with some strong
knock, like as the dry some of the sea: and no man could euer find of what they be made. Some
thinke they are framed of the sharpe pointed prickes of some fishes, for of fish these birds liue.
F They come vp also into fresh riuers within-land: and there do lay ordinarily fiue egges.

As touching the Guls or Sea-cobs, they build in rocks: and the Cormorants both in them,
and also in trees. They vsually lay foure egs apiece. The Guls in summer time, but the Cormo-
rants in the beginning of the spring.

CHAP.

Chap. XXXIII.

¶ *The industrie and wit of birds in building their nests. Of the Swallow, the Argatilis, Cinnamologi, and Partridges.*

THe Architecture and building of the Halcyones nest, hath put me in mind of other birds dexteritie in that behalfe: and surely in no one thing is the wit of silly birds more admirable. The swallows frame their nests of clay & earth, but they strengthen and make them fast with straw. In case at any time they cannot meet with soft and tough clay, for want thereof they drench and wet their feathers with good store of water, and then bestrew them ouer with dust. Now when they haue made and trimmed their bare nest, they floore it in the bottom within, and dresse it all ouer with downe feathers or fine flox, as well to keep their egs warm, as also that their yong birds should lie soft. In feeding of their little ones, they keepe a very good order and euen hand, giuing them their pittance and allowance by course one after another. Notable is their care in keeping them neat and cleane; for euer as they meut, they turne the excrements out of the nest: but be they once growne to any strength and bignesse, they teach them to turne about and lay their tailes without.

Another kinde there is of Swallowes, that keep in the country villages and the fields, which seldom nestle vnder mens houses: and they likewise build of the same matter as the former do, namely, of clay and straw. but after another fashion: for their nests are made turning all vpward, with the hole or mouth that leadeth vnto it, stretched out in length streight and narrow, but the capacitie within is very large, in such sort, as it is a wonder to see how prouident & skilful they should be to frame them in this manner, so hand some & conuenient to couer their yong ones; so soft again for their couch and bed. In the mouth of Nilus neere Heraclea in Ægypt, there is a mightie banke or causey raised only of a continuall ranke and course of Swallows nests, piled one vpon and by another thicke, for the length almost of halfe a quarter of a mile; which is so firme and strong, that being opposed against the inundations of Nilus, it is able to breake the force of that riuer when it swelleth, and is it selfe inexpugnable: a piece of work that no man is able to turne his hand vnto. In the same Egypt neere vnto the towne Coptos, there is an Island consecrated vnto the goddesse *Isis*, which euery yere these Swallows do rampier and fortifie, for feare lest the same Nilus should eat the banks thereof and break ouer into it. In the beginning of the Spring, for three nights together, they bring to the cape of that Island, straw, chaffe, and such like stuffe, to strengthen the front therof: and for the time, they ply their businesse so hard, that for certaine it is knowne, many of them haue died with taking such paines and moiling about this worke. And verily euery yeare they go as daily to this taske againe, as the Spring is sure to come about; and they faile not, no more than souldiers that by vertue of their militarie oath and obligation, go forth to seruice and warfare.

A third sort there is of these Swallows and Martinets, which hollow the banks of riuers, and so nestle within between. The yong birds of these Martins, if they be burnt into ashes, are a singular and soueraigne remedy for the deadly squinancy, and helpe many other diseases of mans body. These build not at all, but if they perceiue that the riuer Nilus when it swelleth, will rise as high as their holes, they are gone many daies before.

There be certaine birds of the kind of Parræ, which of drie mosse make a nest, resembling so perfectly a round ball, that vneth or hardly a man can see which way they should goe in. And another there is called Argatilis, which contriueth her nest after the same forme, but it is of burds and flaxe.

There is a kind of Woodpecker, maketh a nest in manner of a cup or goblet, and hangeth it at a twig vpon the vppermost boughs and branches of a tree, that no foure footed beast should reach it. And as for the birds called Galguli, men say for a truth, that they take their sleep hanging all by their legges to some branch, thinking by that means they are in more safety. True it is indeed and commonly known, that all these birds in great forecast & prouidence, chuse some crosse boughes in stead of rafters, to suphort and beare vp their nests; and then to saue them from the raine, either vaut them ouer with an arched roofe, or else couer them close and thicke with leaues.

A bird there is in Arabia called Cinnamologus, which with the twigs and branches of the Cinnamon

Cinamon tree buildeth her nest. The inhabitants of that country being ware thereof, shake the same downe by shooting arrowes headed with lead, for to make a commoditie therby. In Scythia, there is a bird of the bignesse of an Otis, which commonly laieth two egs, and when they are lapped within a hares skin, alwaies hangeth them vpon the top of tree boughes. The Pyannets, when they perceiue (by a watching eie that they haue) that a man hath spied their nest, presently build in another place, and remoue their egs thither. Now for those birds which haue no hooked nailes, how they should transiate their egs from one place to another, considering their feet are not made to claspe them, it is a wonderful thing, and reported after a strange manner; for they lay a stick ouer two egs, and souder it fast to them with a certain viscositie which commeth forth of their own guts when they meut: which done, they put their neckes vnder the sticke between both egs, which hanging equally poised of either side, they carry easily whither they would.

No lesse industrious are they that make their nests in the ground, as being not able to fly into the aire by reason of their weight ie bodies. Among which there is one called Merops, that vseth to feed her parents, lying hidden within the earth. The inside of her feathers in the wing is pale, the out side blew; and yet those aboue about their neck, are somwhat red. She makes her nest in an hole six foot deep within the ground. Again, the Partridges do so fortifie and impale their nests with thornes and twigs of shrubs and bushes, that they be sufficiently fenced against the inuasion of wilde beasts. They couer their egs with a soft carpet or hilling as it were of fine dust: neither do they sit where they laid them first, nor yet in a place which they suspect to bee much frequented with resort of passengers, but conuey them to some other place. The hennes verily of this kind, hide themselues from their males the cocks; for so lecherous they be and giuen to intemperate lust, that they would squash their egs, becausc they should not be amused and occupied about sitting. Then, for want of the females, the males go together by the eares; and (as they say) he that is ouercome, suffereth himselfe to be troden like an hen. *Trogus* verily reporteth the very same of the Quailes, yea and of dounghill cocks otherwhiles. He saith moreouer, that tame Partridges vse to tread the wild: also that those which are new taken or beaten, be troden of others indifferently one with another. This libidinous heat of theirs is such, and maketh them so quarrelsome, that oftentimes they are taken by that meanes. For when the fouler commeth with his pipe or call (resembling the female) to allure and traine them forth, out goeth the captain of the whole flocke directly against him: and when he is caught, another followeth after, and so the rest one after another, one by one. In like manner, they vse to take the females, at what time as they seeke the male to tread them: for then, forth they goe against the foulers chanterell or watch which calleth them out, that with their quarrelling and brawling which they make, they might chace and driue it away. In sum, there is not to be found in any other liuing creature, the like againe for lust and leacherie in the act of generation. If the hens do but stand directly ouer against the cocks, the very wind and aire that passeth from them, will cause them to conceiue as wel as if they were troden. For so hot they be in that season, that they gape again for aire, and hang the tongue out of their heads. And if the males do but flie ouer them, with the very breath and aire that commeth from them, they will be ready to conceiue: yea and many times, if they do but heare their call. And that which more is, so lecherous they are, that setting aside their naturall affection and loue to their yong couie, when they are brooody (and in which regard they steale from the cocke, and sit apart in some secret and blind corner) yet if they heare once the Foulers chanterell comming toward the male, and that he doth call, presently they will leaue the nest and suffer the egs to chil, and for very iealousie cry again and call backe the males, and offer themselues to be troden, for feare they would goe to others. Nay more than that, their fury and rage that way many times is such, that otherwhiles in this blind fit and fearfull lust, not knowing where they are nor what they do, they will light and settle vpon the very head of the fouler. Also, if he chance to approch the nest of the brood-hen, she will run forth and be about his feet, she wil counterfeit that she is very heauy and cannot scarse go, that she is weake and enfeebliished: and either in her running, or short flight that she taketh, she wil catch a fall, and make semblance as if she had broken a leg or a wing: then will she run out againe another way, and when he is ready to take her vp, yet will she shift away and escape, and so put him besides his hope. And all this doth shee to amuse the Fouler after her, vntill she haue trained him a contrary way from the couey. Now by that time that shee is past that

feare,and freed of the motherly care ſhe had of her yong ones,then will ſhe get into the furrow of ſome land,lie along on her back,catch a clot of earth vp with her feet, and therewith hide her whole body,and ſo ſaue both her ſelfe and her couey. To conclude,Partridges (by report) liue 16 yeres.

Chap. XXXIV.

¶ *Of Houſe-doues.*

NExt after Partridges,the nature of Doues would be conſidered, ſince that they haue in a manner the ſame qualities in that reſpect: howbeit, they be paſſing chaſte, and neither male nor female change their mate,but keep together one true vnto the other. They liue (I ſay)as coupled by the bond of mariage:neuer play they falſe one by the other,but keep home ſtill,and neuer viſit the holes of others. They abandon not their owne neſts, vnleſſe they bee in ſtate of ſingle life or widdowhead by the death of their fellow. The females are very meek and patient;they wil indure and abide their emperious males,notwithſtanding otherwhiles they be very churliſh vnto them,offering them wrong and hard meaſure;ſo jealous be they of the hens, and ſuſpicious,though without any cauſe and occaſion giuen: for paſſing chaſte and continent by nature they are. Then ſhall ye heare the cocks grumble in the throat,quarrell and complain, and all to rate the hens:then ſhall ye ſee them peck and job at them cruelly with their beakes; and yet ſoone after,by way of ſatisfaction,and to make amends again for their curſt vſage,they will fall to billing and kiſſing them louingly, they will make court vnto them and wooe them kindly,they will turne round about many times together by way of flatterie, and as it were by praiers ſeeke vnto them for their loue. As well the male as the female be careful of their yong pigeons,and loue them alike;nay ye ſhall haue the cocke oftentimes to rebuke,yea chaſtiſe the hen,if ſhe keep not the neſt well;or hauing bin abroad,for comming no ſooner home againe to her yong. And yet,kind they be to them,when they are about to build,lay,and ſit. A man ſhall ſee how ready they be,to helpe,to comfort and miniſter vnto them in this caſe. So ſoon as the egs be hatched,ye ſhall ſee them at the very firſt,ſpit into the mouths of the yong pigeons ſalt brackiſh earth,which they haue gathered in their throat, thereby to prepare their appetite to meat,and to ſeaſon their ſtomacks againſt the time that they ſhould eat. Doues and Turtles haue this property,in their drinking not to hold vp their bils between-whiles, and draw their necks backe,but to take a large draught at once,as horſes and kine do.

Chap. XXXV.

¶ *Of Stockedoues.*

SOme authors we haue,who affirme that Stockdoues liue ordinarily 30 yeres, and ſome vntill they be 40 yeares old. In which time they find no infirmitie nor diſcommodity at all but only this,That their clawes be ouergrowne,which is a ſigne of their age: howbeit they may be pared without danger. They haue all of them one and the ſame manner of tune in their ſinging;and commonly they make three reſts in their ſong, beſides the burden in the end, which is a kind of grone. All winter they be ſilent:in ſpring they are loud enough,& the woods reſound with them. *Nigidius* is of opinion,that if a man call vnto a Stockdoue within-houſe as ſhe is ſitting vpon her egs,ſhe will leaue her neſt,and come at the call. They doe lay after Midſommer. Theſe doues and Turtles liue eight yeres.

Chap. XXXVI.

¶ *Of Sparrowes.*

COntrariwiſe,the Sparrow is but ſhort liued, howbeit as lecherous as the beſt. The cocke Sparrow (by report) liueth but one yeare;the reaſon why men ſo thinke, is, becauſe in the ſpring there is not one of them found with a blacke bill,and yet in ſummer before, it began to be blacke. The hens liue ſomwhat longer. But to come againe to Doues, it is generally held,that they haue a certaine ſenſe and feeling of glory: and a man would verily thinke, that they haue a knowledge of their gay feathers,and how they are changeably coloured as a man looketh

looketh vpon them & as they ſtand. Moreouer,they ſeem to take a pride in their flying, whiles they keep a clapping of their wings and cutting of the aire euery way, as if they had a pleaſure to be flying abroad. In which brauerie of theirs, whiles they ſlap with their wings and keepe a glorious noiſe (which cannot be without the beating of their very pinions together) they are expoſed to the Faulcon and other hauks, as priſoners faſt bound and tied: for otherwiſe if they would flie at liberty and eaſe,without keeping ſuch ado with their clapping, they were much more ſwift of wing,than the very hawks that prey vpon them. But the hawke like a very theefe, lieth hidden among the boughes and branches of trees,marketh the Doue how he fetcheth his flight and taketh his pleaſure in the aire;and when he ſeeth his time (in all this glory of his and the mids of his brauery) ſeizeth vpon him and carieth him away.

Chap. XXXVII.

¶ *Of the Keſtrell.*

TO preuent this danger therefore,the Doues need to haue with them the bird which is called Tinnunculus,*i.* a Keſtrill,or Stannell:for the defendeth them,and (by a certaine naturall power that ſhe hath) skareth and terrifieth all other haukes: inſomuch, as they cannot abide either to ſee her,or to heare her cry. Wherupon Doues aboue all others, loue theſe birds. And (as men ſay) pigeons wil not leaue their own douecoat to flie to another, if in the foure corners thereof there be enterred foure Keſtrils aboueſaid,in foure new earthen pots well nealed,and neuer vſed before. But others haue vſed means to keep pigeons in their douehouſe (for otherwiſe they be birds that loue to be ranging and wandring abroad) namely, by ſlitting and cutting the ioints of their wings with ſome thin ſharp piece of gold: for if you do not ſo, their wounds will feſter and be dangerous. And in very truth, theſe birds be ſoon ſeduced and trained away from their owne homes: and they haue a caſt with them to flatter and entiſe one another: they take a great delight to inueagle others,and to ſteale away ſome pigeons from their owne flocks,and euermore to come home better accompanied than they went forth. Moreouer, Doues haue ſerued for poſts and courriers between,and bin imployed in great affairs: and namely,at the ſiege of Modenna, *Decimus Brutus* ſent out of the town letters tyed to their feet,as far as to the camp where the Conſuls lay,and thereby acquainted them with newes,and in what eſtate they were within. What good then did the rampier and trench which *Antonius* caſt before the towne? To what purpoſe ſerued the ſtreight ſiege,the narrow watch and ward that he kept? wherefore ſerued the riuer Po betweene,where all paſſages are ſtopped vp as it were with net and toile,ſo long as *Brutus* had his poſts to flie in the aire ouer all their heads? To be ſhort, many men are growne now to call a ſpeciall affection and loue to theſe birds: they build Turrets aboue the tops of their houſes for doue-coats. Nay they are come to this paſſe, that they can reckon vp their pedigree and race,yea they can tel the very places from whence this or that pigeon firſt came. And indeed one old example they follow of *L. Axius* a Gentleman ſomtime of Rome,who before the ciuill war with *Pompey*,ſold euery paire of pigeons for * 400 deniers, as *M. Varro* doth report. True it is,that there goeth a great name of certaine countries where ſome of theſe pigeons are bred: for Campanie is voiced to yeeld the greateſt and faireſt bodied of all other places. To conclude,their manner of flying inſinuateth and traineth me to thinke and write of the flight of other foules. * 12.lib.13.ſ.

Chap. XXXVIII.

¶ *Of the gate and flight of birds.*

ALl other liuing creatures haue one certaine manner of marching and going, according to their ſeuerall kind,vnto which they keep and alter not. Birds only vary their courſe, whether they go vpon the ground or flie in the aire. Some walke their ſtations,as Crowes and Choughs;others hop and skip,as Sparrows and Ouſels: ſome run, as Partridges, Woodcocks, and Snites: others again caſt out their feet before them, ſtaulk and jet as they go, as Storks and cranes: now for flying,ſome ſpread their wings abroad,ſtirring or ſhaking them but now & then,

hanging and houering with them all the while[as Kites:]others again ply them as fast;but the ends only of their wings,or the vtmost feathers are seen to moue [as the Chaffinch.] Yee shall haue some birds to stretch out their whole wings & sides,mouing them as they flie[as Rauens] and others a man shal see in their flight to keep them in,for the most part close [as the Woodpeckers.] Some of them are known to giue one or two claps with their wings at first, and then glide smoothly away,as if they were carried and born vp with the aire [as Linnets:] and others are seen(as if they kept still the aire within their wings)to shoot vp aloft & mount on high, to flie streight forward,& to fal down again flat[as Swallows.] Ye would think and say that some were hurled out of a mans hand with violence [as the Partridge:] and others again to fal down plumbe from on high [as Larks,]or els to leap & jump[as the Quailes.] Ducks,Mallards,and such like,spring presently from the ground vp aloft,and suddenly mount vp into the skie, euen out of the very water:which is the cause,that if any chance to fall into those pits wherein wee take wild beasts,they alone wil make good shift to get forth and escape. The Geirs or Vulturs, and for the most part all weightie and heauy foules,cannot take their flight & flie,vnlesse they fetch their run and biere before,or els rise from some steepe place with the vantage. And such are directed in the aire by their tails. Some looke about them euery way,others bend and turne their necks in flying:and some fly with their prey within their talons,& eat it as they fly. Most birds cry and sing as they flie,yet some there be contrariwise,that in their flight are euer silent. In one word,some flying carry their brests and bellies halfe vpright:others again beare them as much downward. Some flie side-long and bias:others directly forward, and follow their bills: and last of all there be that bend backward as they flie,or els bolt vpright. In such sort, that if a man saw them all together, he would take them not to be one kind of creature,so diuers & different are they in their motions.

Chap. XXXIX.

¶ *Of Martinets.*

MArtinets,which the Greeks call Apodes(because they haue little or no vse of their feet) and others,Cypseli;are very good of wing,and flie most of all others without rest. And in very truth,a kind of Swallows they be. They build in rocks & stony cliffes. And these be they and no other,that are seen euermore in the sea: for be the ships neuer so remote from the land,saile they neuer so fast and far off, ye shall haue these Martinets alwaies flying about them. All kinds els of Swallowes and other birds,do sometime light,settle,and perch: these neuer rest,but when they be in their nest. For either they seem to hang,or els lie along:and a number of shifts and deuises by themselues they haue besides,and namely when they feed.

Chap. XL.

¶ *Of the bird Caprimulgus,and the Shouelar.*

THe Caprimulgi(so called of milking goats)are like the bigger kind of Owsels. They bee night-theeues;for all the day long they see not. Their manner is to come into the sheep-heards coats and goat-pens,and to the goats vdders presently they go, and suck the milke at their teats. And looke what vdder is so milked,it giueth no more milke, but misliketh and falleth away afterwards,and the goats become blind withall.

There be other birds named Plateæ,*i.* Shouelars. Their manner is to flie at those foule that vse to diue vnder the water for fish: and so long will they peck and bite them by the heads, vntil they let go their hold of the fish they haue gotten,and,so they wring it perforce from them. This bird when his belly is full of shell fishes that he hath greedily deuoured, and hath by the naturall heat of his craw and gorge in some sort concocted them,casteth vp all vp again:and at leasure picketh out the meat,and eateth it again,leauing the shels behind.

Chap. XLI.

¶ *The naturall wit of some birds.*

THe Hens of country houses haue a certaine ceremonious religion. When they haue laied an egge,they fall a trembling & quaking,and all to shake themselues. They turne about also

also,as in procession,to be purified,& with some festue or such like thing,they keep a ceremonie of hallowing,as well themselues as their egs.

Chap. XLII.

¶ *Of the Linnet,Poppinjay or Parrat,and other birds that can speake.*

THe Linnets be in manner the least birds of all others: howbeit they be very docible. Doe they will whatsoeuer they are taught & bidden,not only in their voice,but also with their feet and bils,as if they were hands. In the territorie about Arelate, there is a bird called Taurus(because it loweth like a bull or cow,for otherwise a small bird it is.) There is another also named Anthus,which likewise resembleth the neighing of horses:and if haply by the approch of horses they be driuen from their grasse wherof they feed,they will seem to neigh; and flying vnto them,chase them away,and so be reuenged of them again. But aboue all other birds of the aire,the Parrats passe,for counterfeiting a mans voice: insomuch, as they will seeme to parle and prate our very speech. This foule commeth out of the Indies, where they call it Sittace. It is all the body ouer greene, onely it hath a collar about the necke of vermilion red,different from the rest of her feathers. The Parrat can skil to salute Emperors,and bid †good morrow:yea,and to pronounce what words she heareth. She loueth wine well, and when shee hath drunk freely,is very pleasant,plaifull,and wanton. She hath an head as hard as is her beak:when she learns to speak,she must be beaten about the head with a rod of yron: for otherwise she careth for no blowes. When she taketh her flight down from any place,she lighteth vpon her bil, and resteth therupon,and by that means fauoreth her feet, which by nature are but weake and feeble,and so carrieth her owne weight more lightly.

† χαῖρε.

There is a certain Pie,of nothing so great reckoning and account as the Parrat,because shee is not far set,but here-by neere at hand:howbeit,she pronounces that which is taught her more plainly and distinctly than the other. These take a loue to the words that they speak: for they not only learn them as a lesson,but they learn them with a delight and pleasure. Insomuch that a man shall find them studying thereupon, and conning the said lesson: and by their carefull thinking vpon that which they learn,they shew plainly how mindfull and intentiue they be thereto. It is for certain knowne that they haue died for very anger and griefe that they could not learn to pronounce some hard words:as also,vnlesse they heare the same words repeated often vnto them,their memory is so shittle,they will soone forget the same againe. If they misse a word,and haue lost it,they wil seeke to call it againe to remembrance; and if they fortune to heare the same word in the mean time,they will wonderfully ioy thereat. As for their beautie, it is not ordinary,although it be not very loucly. But surely amiable enough they are in this, that they can so well resemble mans speech. It is said,that none of their kinde are good to bee made scholers,but such only as feed vpon mast: and among them, those that haue fiue toes to their feet. But euen these also are not fit for that purpose,after the first two yeares of their age. And their tongue is broader than ordinarie:like as they be all that counterfeit mans voice,each one in their kind,although it be in maner general to all birds whatsoeuer to be broad tongued. *Agrippina* the Empresse,wife to *Claudius Cæsar*,had a Black-bird or a Throstle, at what time as I compiled this booook,which could counterfeit mans speech;a thing neuer seen nor knowne before. The two *Cæsars* also,the yong princes(to wit,*Germanicus* & *Drusus*) had one Stare,& sundry Nightingales,taught to parle Greeke and Latine. Moreouer,they would studie vpon their lessons,and meditate all day long: and from day to day come out with new words still,yea,and were able to continue a long speech & discourse. Now for to teach them the better,these birds must be in a secret place apart by themselues,where they can heare no other voice: and one is to sit ouer them,who must repeat often that which he would haue them to learn; yea, and please them also with giuing them such meat as they best loue.

Chap. XLIII.

¶ *The wonderstanding and wit that Rauens haue.*

LEt vs not defraud the Rauens also of their due praise in this behalfe, considering,that the whole people of Rome hath testified the same not only by taking knowledge,but also by a publick reuenge & exemplarie punishment. And thus stood the case. In the daies of *Tiberius*

berius the emperor, there was a yong Rauen hatched in a nest vpon the church of *Castor* & *Pollux*; G
which, to make a triall how he could flie, took his first flight into a shoomakers shop just ouer-
against the said church. The master of the shop was well enough content to receiue this bird,
as commended to him from so sacred a place, and in that regard set great store by it. This Ra-
uen in short time being acquainted to mans speech, began to speak, & euery morning would fly
vp to the top of the Rostra or publick pulpit for Orations, where, turning to the open Forum &
market place, he would salute and bid good morrow to *Tiberius Cæsar*, and after him, to *Germa-
nicus* and *Drusus* the yong princes, both *Cæsars*, euery one by their names: and anon the people
of Rome also that passed by. And when he had so don, afterwards would flie again to the shoo-
makers shop aforesaid. This duty practised, yea and continued for many yeres together, to the
great wonder and admiration of all men. Now it fell out so, that another shoomaker who had H
taken the next coruiners shop vnto him, either vpon a malicious enuie that he occupied so neer
him, or some sudden spleene and passion of choler (as he would seeme to plead for his excuse)
for that the Rauen chanced to meiu a little, and set some spot vpon a paire of his shooes, killed
the said Rauen. Whereat the people tooke such indignation, that they rising in an vprore, first
drone him out of that street, and made that quarter of the city too hot for him: and not long af-
ter murdered him for it. But contrariwise the carkasse of the dead Rauen was solemnly enter-
red, and the funerals performed with all ceremoniall obsequies that could be deuised. For the
corps of this bird was bestowed in a coffin, couch or bed, and the same bedecked with chaplets
and garlands of fresh floures of all sorts, carried vpon the shoulders of two blacke-Mores, with
minstrels before, sounding the Haut-boies, and playing on the Fife, as far as to the Funeral fire; I
which was piled and made in the right hand of the causey Appia, two miles without the city in
a certain plain or open field called Rediculi. So highly reputed the people of Rome that ready
wit and apt disposition in a bird, as they thought it a sufficient cause to ordaine a sumptuous
buriall therefore: yea, and to reuenge the death thereof, by murdering a citizen of Rome in that
city, wherein many a braue man and noble person died, and no man euer solemnized their fune-
rals: in that city I say which affoorded not one man to reuenge the vnworthy death of that re-
nowned *Scipio Æmylianus*, after he had woon both Carthage and Numantia. This happened the
fifth day before the Calends of Aprill, in the yeare when *M. Seruilius*, and *C. Cestius* were Con-
suls of Rome. Moreouer, euen at this very present, when I wrote this historie, I saw my selfe a K
Crow belonging to a certain knight of Rome, who brought him out of the realm of Grenado
in Spaine, which was a very strange and admirable bird, not only for the exceeding blacke co-
lour of his feathers, but also for that he could pronounce and expresse so perfectly many words
and sentences together, and learned still new lessons euery day more than other. It is not long
since that there went a great bruit and fame of a notable hunter in Erizena a countrey of Asia,
whose name was *Craterus Monoceros*: that vsed to hunt by the meanes and helpe of Rauens. His
manner was to carry with him these Rauens into the Forrest, perching vpon his shoulders & his
hunting hornes: and these would seeke out and put vp other wilde ones, and bring them to him.
Thus by custom & vse he brought his hunting to this good passe, that when he returned home-
ward out of the forest, the wild as well as the tame would accompany him. Some haue thought L
it worth the setting downe vpon record, how there was a Rauen seene in time of great drought
when water was hard to come by, for to cast stones into the bucket belonging to a sepulchre,
wherein there was some rain water remaining toward the bottome, but so deepe, that he could
not reach vnto it: and being afraid to go downe into it, by heaping vp many stones, hee brought
the water to rise so high, as he might drinke sufficient with ease.

Chap. XLIV.

¶ *Of Diomedes his birds.*

M

NEither will I ouerpasse the birds called Diomedeæ, which K. *Iuba* nameth Cataractæ.
Toothed they are, as he saith; and they haue eies as red and bright as the fire: otherwise
their feathers be all white. Who also affirmes, that they euermore haue two captains, the
one for to lead the vaward, and the other for the reregard. With their bils they dig little tren-
ches & gutters in the ground: ouer which from side to side they lay sticks, acrosse like hurdles,
arti-

A artificially, and then couer the same ouer with the earth they cast forth before, vnder which
they breed. Euery of these trenches hath two dores, the one regarding the East, at which they
go forth to their meat: and the other looking toward the West, by which they come in againe
after their returne. Whensoeuer these birds would meut, they flie euer full into the winde, be-
cause they would not file themselues. Found they be in one place of the world, and but in one,
namely in a certaine Island, innobled, as we haue written before, for the tombe and Temple of
Diomedes, and it lieth vpon the coast of Apulia. These birds are like vnto the white sea Mewes
with a blacke cop. Their manner is to cry with open mouth vncessantly at any strangers that
come aland, saue only Grecians, vpon whom they wil seem to fawn and make signes of loue and
amitie in all flattering wise. A wonderfull thing that they should discerne one from another,
and giue such friendly welcome to them, as discended from the race of *Diomedes*. Their manner
B is euery day to charge their throat and wings full of water, and all to drench therewith the said
temple of *Diomedes*, in token of purification. Whereupon arose the fable, That the compani-
ons of *Diomedes* were turned into these birds.

Chap. XLV.

¶ *What Birds are not apt to learne, and will not be taught.*

AND now that we are in this discourse of wit and capacitie, I must not omit to note, That
of birds the Swallow; and of land beasts the Mouse and the Rat, are very vntoward, and
cannot be brought to learn. Whereas we see great Elephants ready to do whatsoeuer they
C are commanded: the furious Lions brought to draw vnder the yoke: the Seals within the sea,
and so many sorts of fishes grow to be tame and gentle.

Chap. XLVI.

¶ *The manner of Birds in their drinking.*

BIrds drinke sucking, and those that haue long necks make stayes betweene, and euery while
hold vp their bil from the water, as if they would poure the water down their throat. The
bird Porphyrio alone seems to bite the water as he drinketh. And this bird hath this pro-
D pertie by himselfe, to dip and wet all his meat euer and anon in water, and then with his foot in
lieu of an hand to reach it vnto his bil. The best of this kind are in Comagene. Their bils and
long shanks that they haue be red.

Chap. XLVII.

¶ *Of the Foule Himantipus, the Onocrotali, and other strange fowles.*

LIke in that respect vnto the Porphyrio, is the Himantipus, a bird far lesse in body, but full
as long legged, and stalking as high. They are bred in Ægypt, and go vpon three toes to a
foot. Their most feeding is vpon flies. In Italy they liue not many daies. All great & hea-
E uie birds liue on seeds and corn: they that fly on high prey vpon flesh. Among water fouls the
Cormorants vse to deuoure that which other birds either disgorge or meute. The Onocrotali
much resemble swans, and surely they might be thought the very same and no other, but that
they haue within their throat another kind of gizzar besides their craw, in which, these fowles
being vnsatiable, bestow all that euer they can get; whereby it is of a wonderfull great capaci-
tie, and will receiue very much. Now when they haue done the rauening, and filled this poke,
soon after they conuey it from thence by little and little into their mouth, and there chew the
cud, vntill after it be well prepared, they swallow it downe into the very craw and belly indeed.
These fowles are to be found in the parts of Picardie and Normandy in France, lying vpon the
F North Ocean. In Hircinia, a forrest of Germanie, we haue heard that there be strange kinds of
birds, with feathers shining like fire in the night season. In other respects I haue nothing to
say of them worth the writing, saue only they are of some name for being far fetched.

CHAP.

Chap. XLVIII.

¶ *The names and natures of many Birds.*

OF water fowls, the Phalerides are thought in Seleucia of the Parthians, and also in Asia, to be the daintiest. Likewise the Fesant hens of Colchis, which haue two ears as it were consisting of feathers, which they will set vp and lay down as they list. The Ginnie or Turkey hens in a part of Africke called Numidia, be in great request, as also throughout all Italy now adaies. *Apicius*, the most riotous glutton and belly-god of his time, taught men first, that the tongue of Phœnicopterus was a most sweet and delicat piece of meat. The Moore-hen of Ionia is much commended and highly esteemed. This bird so soon as she is taken prisoner, loseth her voice and is mute; for otherwise she is vocal and loud enough, and in old time was reputed a rare and singular bird. But now there be caught of them in France and Spain, yea and among the Alps: where also the Plungeons or bald Rauens be, which heretofore were thought proper and peculiar to the Baleare Islands: like as the Pyrrhocorax [*i.* the red Rauen] with the yellow bill, was supposed to breed onely among the Alps: and with it the Lagopus, a daintie bird, and most pleasant in the dish. And this name it took in Greek, because it is rough footed and haired like the haires foot: otherwise all ouer white, and as big as a pigeon. Haue her out of the ground, vnder which she breedeth, you shall hardly get her to feed, neither will shee be made tame, liue she neuer so long: kill her once, the body presently wil rot and putrifie. There is another besides of that name, and differeth from Quailes onely in bignesse, for it is greater than the Quaile; and with a yellow sauce of saffron it is a most delicate piece of meat. *M. Egnatius Calvinus* gouernor of the parts about the Alps, reporteth, that he hath seen there the Ibis a bird proper to the land of Ægypt.

Chap. XLIX.

¶ *Of new Birds, and such as are holden for fabulous.*

DVring the ciuil wars between *Otho* and *Vitellius*, and namely about the time of the journy or battell of Bebriacum beyond the Po, there were these new birds (for so they be called still at this day) brought into Italy. Like they be to Thrushes or Mauisses, somewhat lesse than house doues, pleasant in the eating. The Baleare Isles send vs another Porphyrio, better than that before named, *cap.* 46. Where the Buzards also a kind of Hawk are held for excellent meat, and serued vp at the table. Likewise the Vipio, for so they call the lesser Crane. As for the fowles called Pegasi, headed like horses; and the Griffons, which are supposed to haue long eares and a hooked bill, I take them to be meere fables: and yet they say that the Pegasi should be in Scythia, and the Griffons in Ethyopia. Moreouer, I thinke the same of the Tragopanades, which many men affirm to be greater than the Egle, hauing crooked horns like a ram on either side of the head, of the colour of iron, and the head only red. As touching the Birds Syrenes, I wil neuer beleeue there be any such, let *Dino* the father of *Clitarchus* that renowmed writer say what he wil: who auoucheth for a truth, that they be in India, and that with their singing they wil bring folk asleep, and then fly vpon them and teare them in pieces. He that will giue credit to these fables, may euen as well beleeue, that dragons forsooth taught *Melampus* by licking his eares, how to vnderstand the language of birds when they chaunt and sing vpon trees, or cry and chirp in the aire. Likewise the tales that *Democritus* telleth, who nameth certain birds, of whose bloud mingled together and suffered to corrupt, there is ingendred a Serpent, which whosoeuer eateth shall know what birds say one to another in their speech: and namely the strange things he telleth of the Lark aboue the rest. For verily without these fabulous lies, mens heads be occupied enough, and too much to, about the Auguries onely and presages of birds, that they haue no need to busie & trouble their brains about those toies. *Homer* makes mention of certain birds called Scopes: but I cannot conceiue those satyrical gesticulations of theirs like Antikes when they are perched, which so many men talke of, neither doe I think otherwise, but that these birds are out of knowledge now a daies. And therefore far better it is to write of those we know.

CHAP.

Chap. L.

¶ *Who first deuised to cram Hens. Who inuented Mues and Coupes to keepe foule in.*

THey of the Island Delos began the cramming of Hens and Pullein first. And from them arose that detestable gourmandise and gluttonie to eat Hens and Capons so fat & enterlarded with their owne grease. Among the old statutes ordained for to represse inordinate feasts, I find in one act made by *C. Fannius*, a Consul of Rome, eleuen yeres before the third Punick war, an expresse prohibition and restraint, That no man should haue his table serued with any foule, vnlesse it were one hen, and no more, and the same a runner only, and not fed vp and crammed fat. The branch of this one statute was afterwards taken forth and inserted in al other acts prouided in that behalfe, & went currant thorough all. Howbeit, for all the law so well set down, there was a starting hole found to delude and escape the meaning therof, namely, to feed Cocks & Capons also with a past soked in milk & mead rogether, for to make their flish more tender, delicate, and of sweeter taste: for that the letter of the statute reached no farther than to Hens or Pullets. As for the Hens, they only be thought good and well ynough cramm'd, which are fat about the neck, and haue their skin plumpe and soft there. Howbeit, afterwards our fine cookes began to looke to their hind-parts about the rumpe, and chuse them thereby. And that they should make a greater shew in the platter, they slit them along the chine: and lay their legs out at large, that they might take vp the whole dresser bourd. The Parthians also haue taught our cooks their own fashions. And yet for all this fine dressing and setting out of meat, there is nothing that pleaseth and contenteth the tooth of man in all respects; while one loues nothing but the leg, another likes and praises the white brawne alone, about the breast bone. The first that deuised a Barton & Mue to keepe foule in, was *M. Lenius Strabo*, a gentleman of Rome, who made such an one at Brindis, where he had enclosed birds of all kinds. And by his example we began to keepe foules within narrow coups and cages as prisoners, to which creatures Nature had allowed the wide aire for their scope and habitation.

Chap. LI.

¶ *Of Æsopes proud platter.*

BVt in the relation and report of this argument, notorious aboue all the rest in our memorie is that platter of *Clodius Æsopus*, the plaier of Tragedies, which was esteemed worth * six hundred Sestertia. In this one charger he serued vp at the table all kind of birds that either could sing or say after a man: and they cost him six hundred Sesterces apeece. And surely it was no delight & pleasure that he fought herein to content the tooth, but only that he would haue the name to eat the resemblers of mans voice: without any consideration & regard that he had of all that great riches and reuenues of his owne, which himselfe had gotten by his tongue, and by counterfeiting the speech of others. A father verily worthie such a sonne, who as we said before, deuoured those precious pearles. And to speake a truth, it is hard to judge whether of them twaine plaied the beast more, the father or the sonne. But that it seemeth lesse pride and prodigalitie to swallow down the throat the greatest riches of Nature, than to chew and eat at a supper mens tongues, that is to say, those birds that could pronounce our language.

* i 600000 Sesterti, 150000 denicrs.

Chap. LII.

¶ *The engendring of birds: and what foure-footed beasts lay egges as well as they.*

THe generation of birds seemes alwaies to be after one & the same manner. And yet therein is to be found some strange & extraordinarie worke. Like as there be four footed beasts known also to haue eggs, namely, the Chamæleons, Lizards, and such as we named among Serpents. Of foules, those that haue hooked clawes and tallons, are but barren that way, and lay few eggs. Only the Kestrell laieth foure at a time. And verily Nature hath well prouided in all the kind of foules, That the mightier should be lesse fruitfull than the weaker and those that flie from the other. The Ostriches, Hens, Partridges, and Linnets, are great laiers. As touching the

the manner of their engendring, it is performed two waies: for either the female coucheth G
downe,as doe our hens; or elſe ſtand vpon their feet,as doe the cranes. Of eggs,ſome be white,
as thoſe of Doues and Partridges; others, be pale and yellowiſh, as thoſe of water-foule: ſome
be ſpotted, as thoſe of the Turkie-hens: others againe red; and ſuch egs Feaſants lay, and Ke-
ſtrils.

All birds egges within the ſhell, are of two colours. In water-foules, the yolke is more than
the white,and the ſame is more wan and duskiſh than in others. The egges of fiſhes are of one
colour,and therein is no white at all. Birds eggs are brittle ſhelled,by reaſon of their heat. Ser-
pents eggs are more tough becauſe of cold: but they of fiſhes are more ſoft and tender, for that
they be ſo liquid. Thoſe of fiſhes and ſuch creatures as liue in water,haue round eggs ordinari-
ly: others be long and pointed at one end in the top. Birds lay their egges with the rounder end H
comming forward: their ſhell is ſoft whiles they be warm and a laying, but preſently they har-
den by peecemeale as they come forth. *Horatius Flaccus* is of opinion, that the longer the egge
is,the better taſt it hath. The rounder egge prooues to be the hen commonly, the reſt will be
cockes. There is found in the * top or ſharper end of an egge within the ſhell,a certaine round
knot reſembling a drop or a nauil,riſing aboue the reſt,which they call a Kinning.

* Or rather in the crown and broader end, as our Writers ſay.

Chap. LIII.

¶ *The engendring of egges: the ſitting of birds: and their manner of generation.* I

SOme birds there be, that tread all times of the yeare; and lay egs but only two moneths in
mid winter: and of thoſe,pullets lay more than old hens,but they be leſſe,eſpecially the firſt
and laſt of one laiter. So fruitfull they be,that ſome of them wil lay threeſcore egs ere they
giue ouer: ſome euerie day; others,twice in one day: and ſome will ouer-lay,vntill they be ſo
weary and feeble withall,that they will neuer lay more,but die withall. The little ſhort legged
grig hens,called Hadrianæ (that came from Hadria) are counted beſt. Doues lay & conuey ten
times in the yeare,ſome of them eleuen: and in Ægypt there are found that giue not ouer in the
twelue months,euen at mid-winter in December. Swallowes,Ouſels,Quoiſts or Ringdoues and
Turtles,lay and ſit twice in the yeare: other birds ordinarily but once. Thruſhes and Blackbirds K
build their neſts of mud and clay, in trees and buſhes one by another, ſo neere as if they were
linked together: and lightly they engender in ſome corner out of the way. After the hen is tro-
den, within ten daies the egs commonly knit within her bellie,are come to perfection & readie
to be laid. Howbeit if hens haue ſome wrong done vnto them,or if a man chance to pluck a fea-
ther or quill from a pigeon at that time,or do them ſome ſuch iniurie,it will be longer ere they
lay.

All egs haue within them in the mids of the yolk, a certaine drop as it were of bloud,which
ſome thinke to be the heart of the chicken, imagining that, to be the firſt that in euerie bodie
is formed and made: and certainly a man ſhall ſee it within the verie egge to pant and leape. As
for the chick,it taketh the corporall ſubſtance,and the bodie of it is made of the white watериſh L
liquor in the egge, the yellow yolke ſerues for nouriſhment: whiles the chick is vnhatched and
within the egge,the head is bigger than all the bodie beſides: and the eies that be compact and
thruſt together,be more than the verie head. As the chick within growes bigger,the white tur-
neth into the middeſt,and is incloſed within the yolke. By the 20 day (if the eggs be ſtirred) ye
ſhall heare the chick to peepe within the verie ſhell: from that time forward, it beginneth to
plume and gather feathers: and in this manner lies it within the ſhell, the head reſting on the
right foot,and the ſame head vnder the right wing,and ſo the yolke by little and little decrea-
ſeth and faileth. All birds are hatched with the feet forward,contrarie to other creatures. Some
hens there be, that lay all their egs with two yolkes; and of them be hatched two chickens o- M
therwhiles,as *Cornelius Celſus* writeth,but the one of them is bigger than the other. Howbeit,o-
thers ſay,it is impoſſible that one egge ſhould come to two chickens. Moreouer,it is held for a
rule,that there ſhould not be put vnder a brood-hen aboue 25 egs at one time to ſit vpon. Af-
ter the mid-winter,hens begin to lay and ſit. The beſt brood is before the ſpring Æquinoctiall.
Thoſe that be hatched after mid-ſummer, neuer come to their full and kind bigneſſe: and euer
more the later the leſſer.

CHAP.

A

Chap. LIV.

¶ *The infirmities and impediments incident to brood hens, and the remedies.*

THe beſt egs that can be put vnder hens when they ſit, are they that were laid ten daies be-
fore at the vtmoſt; for neither old eggs,nor yet very new laid are good for that purpoſe.
After that a hen hath ſitten 4 daies,take an eg from vnder her, hold it in one hand by the
narrow end, and look between you and the light,with the other ouer it; if it be cleare through
and of one colour,it is ſuppoſed to be naught, and will neuer proue a chicke, and therefore put
another in place thereof. Another experiment there is by water: the addle egg wil flote aboue
B as empty, the ſound and good will ſinke to the bottom: and ſuch therefore being full are to be
ſet vnder the hen. We ye would try whether an egg be good or bad in this caſe, our countrey
wiues ſay,you muſt not ſhake them in any hand,for if the vital veins & parts be broken & blen-
ded together,they will neuer prouc. Moreouer,this is alwaies to be looked vnto,that ye begin
to ſet an hen after the change of the moon, for if you ſet her in the wain,the eggs will be addle,
and neuer come to be chickens. The warmer the weather is,the ſooner will ſhe hatch,& there-
fore it falleth out, that in ſummer ye ſhal haue her abroad with her brood vpon the nineteenth
day; in winter many times it will be 25 daies firſt. If it thunder while ſhe is broody the eggs
will be addle; yea and if the hen chance but to heare an hawke cry they will be marred. The
C remedie againſt thunder,is to put an iron nail vnder the ſtraw of the hens neſt,or els ſome earth
newly turned vp with the plow. Ouer and beſides, there be ſome egs that will come to be birds
without ſitting of the hen, euen by the worke of Nature only, as a man may ſee the experience
in the dunghills of Egypt. There goeth a pretty jeaſt of a notable drunkard of Syracuſa,whoſe
manner was when hee went into the Tauerne to drinke, to lay certaine egges in the earth, and
couer them with mould, and he would not riſe nor giue ouer bibbing vntill they were hatched.
To conclude,a man or woman may hatch eggs with the very heate only of their body.

Chap. LV.

D ¶ *The Auguries and preſages of Eggs.*

LIvia Auguſta the Empreſſe,wife ſomtime of *Nero*,when ſhe was conceiued by him,& went
with that child [who afterwards proued to be *Tiberius Cæſar*] being very deſirous (like a
yong fine lady as ſhe was) to haue a jolly boy, practiſed this girliſh experiment to fore-
know what ſhe ſhould haue in the end: ſhe tooke an egge, and euer carried it about her in her
warme boſome; and if at any time ſhe had occaſion to lay it away, ſhe would conuey it cloſe-
ly out of her owne warme lap into her nurſes, for feare it ſhould chill. And verily this preſage
proued true,the egge became a cocke chicken,and ſhe was deliuered of a ſonne. And hereof it
may well be came the deuice of late, to lay egges in ſome warme place, and to make a ſoft fire
E vnderneath of ſmall ſtraw or light chaffe to giue a kinde of moderate heate: but euermore the
eggs muſt be turned with a mans or womans hand, both night and day; and ſo at the ſet time
they looked for chickens and had them. It is reported beſides of a certaine Poulter, who had a
ſecret by himſelfe,whereby he could tell ſurely and neuer miſſe, which egge would be a cocke
chicke,which a hen: alſo of many hennes that he kept, which was euery hens egge, if hee did
but ſee it. We haue heard moreouer,that when a brood hen chanced to die,the cocke that vſed
to tread her,were ſeen to go about with the chickens one after another by turnes,and to do eue-
rie thing like to the very hen indeed that hatched them: and all that while to forbeare once to
crow. But aboue all it is ſport alone to ſee the maner of an hen that hath ſitten vpon ducks egs
and hatched them, how at the firſt ſhe will wonder to haue a teem of ducklings about her, and
F not acknowledge them for her owne; but ſoone after ſhee will clucke and call this doubtfull
brood to her very carefully and diligently: but at the laſt,when ſhe perceiues them, according
to their kind,to take the water and ſwim,how ſhe will mourn and lament about the fiſh-poole,
that it would pitty ones heart to ſee them what moane they will make.

CHAP.

Chap. LVI.

¶ Which be the beſt hens.

A Man ſhall know a good and kindly hen by her comb, when it is ſtrait and vpright: otherwhiles alſo double creſted: alſo by the pinion feathers blacke, the vpper plume reddiſh. Such a hen will be red alſo about her head and bill, and haue an odde toe to her feet, yea and ſomtime that od one to lie croſſe ouerthwart the other foure. In caſe of ſacrifices and religious vſe they are not thought good nor allowable that haue beck and feet yellow. For diuine ſeruice and ſecret myſteries celebrated in couert to the goddeſſe *Ops*, the black are allowed for good. There is alſo a dwarfiſh kind of hens, [*i.* grig hens] that are extraordinarie little, and yet fruitful, a thing not ſeen in any other kind of fowle: they lay and miſſe not, but ſeldom ſit they on any egs, and if they do it is hurtfull for them.

Chap. LVII.

¶ The maladies that hens be ſubiect vnto, and the remedies.

THat which troubleth all the kind of them is a certain diſtillation of a phlegmaticke humor, which cauſeth the pip, the moſt of all between haruеſt time and vintage. The cure is, to keep them hungry & long faſting: alſo to let them lie or perch in a ſmoky place, eſpecially where the ſume is made of Bay leaues and the herb Sauin. It is good moreouer, to draw a little quill or feather through their noſthrils acroſſe, and to remoue or ſhift it euery day. As for their meat, let it be ſome cloues of garlicke ſhred among their corne, or elſe let their meat be well infuſed or ſteeped in water, wherein an owle hath waſhed and bathed her ſelfe; or elſe ſodden with the ſeed of Bryonie or the wilde white Vine: beſides ſuch other medicines as are daily in vſe.

Chap. LVIII.

¶ The manner how fowles do conceiue, and what number of yong ones commonly they hatch.

DOues haue this propertie by themſelues, to bill one another and kiſſe before they tread. They lay for the moſt part two egs. Thus Nature hath diſpoſed, that ſome ſhould breed often and few: others ſhould hatch many together at once. The Ringdoues or Quoiſts, and Turtles, ordinarily lay three egs; and lightly they ſit and hatch but twice a yere: and that is, if their firſt brood come not to perfection, but miſcarried and was not reared vp. And albeit they lay three egs, yet they neuer hatch but twain: the third that is addle, they call in Latine *Vrinum*. The female Ringdoue ſits euer from noon vntil the next morning; the male makes vp the reſt of the day. Houſe-doues breed euermore one cock pigeon, and another hen. The male is hatched to day, and the female tomorrow. In that kind they ſit both, the cock all day, and the hen by night: and vſually vpon the 20 day they hatch. They lay within fiue daies after they be troden, and in ſummer time verily you ſhall haue them in the ſpace of two months bring three paire of pigeons; for then they vſe to hatch by the 18 day: and preſently they conceiue again. So that a man ſhall oftentimes find new laid egs euen amongſt the young pigeons: and otherwhiles it is ſeen, that whiles ſome are ready to fly, others peep newly out of their ſhel: and theſe yong birds within fiue moneths will lay themſelues. Now the nature of theſe hen doues is (if they want a cock) to tread one another, and hereof they come to lay barren egs, wherof nothing will be ingendred: and ſuch the Greeks call Hypenemia, *i.* wind-egs.

Chap. LIX.

¶ Of the Peacocke and Geeſe.

THe Pea-hen falls to lay and breed after ſhe is 3 yeres old. In the firſt yere ſhe begins with one or two egs: the yeare following ſhe riſeth to foure or fiue: in the reſt ſhee reacheth to twelue and no more. When ſhe layeth, her manner is to reſt two or three dayes betweene euery egge. And thrice a yeare ſhe keepeth this order, namely, if her egges be taken from

from her, and put vnder hens to be ſitten vpon: for why, the Peacocks will break them if they can meet with them, becauſe they cannot miſſe and ſpare the Peahens company while they are broody and ſitting: which is the cauſe they are wont to lay by night, or in ſome ſecret corner out of the way, and that from an high place where they perch: and then, vnleſſe there be good heed taken that the eggs be latched in ſome ſoft bed vnderneath, they are ſoone broken. One Peacock is ſufficient to go with fiue wiues: for when there is but twain [the villaine is ſo lecherous] with ouermuch treading he hindereth their laying, and marreth the knot of eggs ingendred within them. The Peahen hatcheth in 28 daies, or in thirty at the fartheſt.

Ganders and Geeſe ingender together in the very water. Geeſe lay ordinarily in the ſpring: or if they were troden about mid-winter, then ye ſhall haue them lay after the Winter Sunneſtead ſome forty daies or very neere. They haue vſually two laiters in the yeare, namely, if hens hatched their former egs. The moſt that they hatch at one ſitting is ſixteene, and the feweſt ſeuen. If a man ſteale their egs from them they lay ſtill, and neuer giue ouer till they be readie to burſt with laying. No birds egs but their own will they hatch. The moſt profitable way, is to ſet them vpon nine or eleuen. The females only ſit, and that for the ſpace of 30 daies, vnleſſe it be warme weather, and then they will haue done by 25. If one of their Goſlings be ſtung neuer ſo little with a nettle, it will die of it. Their owne greedy feeding alſo is their bane, for one while they will eat vntill they burſt again; another whiles kill themſelues with ſtraining their own ſelues: for if they chance to catch hold of a root with their bill, they will bite and pul ſo hard for to haue it, that many times they breake their owne neckes withall, before they leaue their hold. Againſt the ſtinging of nettles the remedie is, that ſo ſoone as they be hathed there be ſome nettle roots laid vnder their neſt of ſtraw.

Chap. LX.

¶ Of Herons and Bittours, and the beſt way to keepe egs long.

OF Herons be three ſorts, * Leucon, * Aſterias, * and Pellon: theſe laſt ingender with much paine and difficultie; as for the males verily they cry againe for anguiſh, and the bloud ſtarts out of their eies in the act of treading. And with as much ado and trouble do the females lay, after they be knit with eg. The Egle and the moſt part of the greater fouls ſit 30 daies, whereas the leſſe continue but 20, as the Kite and the Hawk. The Kite vſually hatcheth but one at a time, and neuer aboue three: but that kind called Ægolios ſomtimes foure. The Rauen alſo now and then fiue: and thoſe cooue as many daies. While the female crow ſits the male feeds her. The Piot ordinarily brings forth nine Piannets. the fig-pecker Melancoryphus aboue 20, but euermore an od one: and there is not a bird that goeth therein aboue her. Lo how Nature is willing to multiply the race of little birds! The yong Swallowes are at the firſt blind, and ſo are all ſuch as are hatched many in number. Wind-egs, which we call Hypenemia, come either by the mutuall treading of hens one another, by an imaginarie conceit of the male, or elſe by duſt. And ſuch egs not only Doues doe bring, but houſe Hens alſo, Partridges, Peahens, Geeſe, and Brants, or the female Barganders. Now theſe egs are barren as it were, and neuer proue birds, leſſe than others, not ſo pleaſant in taſte, and beſides more moiſt. Some are of opinion that the wind will ingender them, for which cauſe alſo they are called Zephyria [*i.* Weſt-wind egs.] And verily ſuch egs are ſeen only in the ſpring, when that wind blowes. Addle egs, which ſome called Cynoſura, are they that chill vpon the reſt, when the hen is gone and giueth ouer ſitting. Egs ſteeped in ſtrong vineger will come to be ſo ſoft, that they will paſſe and be drawn through the ring of a mans finger. The beſt way to keep egges is in beane meale or floure; and during winter in chaffe, but for ſummer time in bran. It is thought if they lie in ſalt their ſubſtance will waſte and conſume to nothing within the ſhell.

* A Criell, or dwarfe Heron.
‡ Bittor.
‡ A Carion Heron

Chap. LXI.

¶ What Bird alone bringeth forth a liuing creature, and feedeth it with milke.

THe Rere-mouſe or Bat alone of all creatures that fly, bringeth forth yong aliue, and none but ſhe of that kind hath wings made of pannicles or thin skins. She is the only bird that

G suckleth her little ones with her paps, and giues them milk: and those she wil carry about her two at once, embracing them as she flieth. It is said also that she hath no more but one ioynt of the hanch, without any in the knee or feet: and that they take greatest delight to feed vpon gnats.

Chap. LXII.

¶ *Of Vipers: their manner of generation and bringing forth yong: and what land beasts do lay egges.*

MOreouer, among creatures of the land, serpents lay egs: whereof as yet we haue not written. As they ingender together they clip and embrace, and so intangled they be and inwrapped one about the other, that a man who saw them would think they were one ser- H pent with two heads. In the very act of generation the male Viper thrusteth his head into the mouth of the female; which she (for the pleasure and delectation that she hath) gnaweth and biteth off. No land creature els but she hath egs within her belly, of one colour and soft, like as fishes haue. Now after three daies they be quicke, and then come forth as they be hatched, but no more than one at once euery day: and 20 commonly she hath. When she is deliuered of the first, the rest (impatient of so long delay) eat through their dams sides, and kil her. As for other serpents they lay their egs linked and chained together, and so sit vpon them on the land: but they hatch them not vntill the yeare following. Crocodiles sit by turnes, the male as well as the female. But I thinke it good to treat also of the generation of other land creatures. I

Chap. LXIII.

¶ *The generation of liuing creatures vpon the land.*

OF all liuing creatures two footed, a woman onely bringeth forth her yong quicke. Men and women both, and none but they, repent at first the losse of their maidenhead. A very presage (no doubt) of a life to ensue full of trouble and miserie, that thus should begin with repentance. All other creatures haue their set times and certain seasons in the yeare when they ingender, as hath bin shewed before: but all is one with vs, and no houre of day or night comes amisse. Other creatures know when they haue enough, and rest satisfied: we only are in- K satiable that way, and cannot see to make an end. The Empresse *Messalina*, wife of *Claudius Caesar*, thinking it the only victorie for a lady and queen to excell in this feat, chose the most gallant curtisan and commonnest strumpet in all Rome, to try masteries and to contend with for the best game: and in very truth she won the prize; for in the space of 24 houres she out-went her [a beastly thing to be written] no fewer than 25 times. As for men, they haue deuised in the practise of this filthy act, euen to abuse some parts against kind: and women (vnnatural as they be) haue the cast to destroy within them the vnripe and vntimely fruit of their own body. Certes in this behalfe how much worse are we than the wild and sauage beasts of the field. *Hesiod* writeth, that men are more giuen to lust in winter than in summer, and women contrariwise. Elephants, Camels, Tigers, Onces, Rhinoceros, Lions, Hares, Connies, and generally all beasts L which haue their genitall parts from-ward, turn taile to taile to the female in the act of generation. As for Camels, they go into the desart, or at leastwise seeke some corner when they would ingender; and dangerous it is for one to take them in the maner. They continue in this action one whole day together, and so do none els that are whole hoofed. In foure footed beasts the males are set into the heat of lust by senting and smelling. Dogs and Bitches, Seales & wolues likewise turn away, and in the mids of the action be tied one to another euen against their wils, and cannot help it. The females of most of these before named begin to ride the males first, for to prouoke their lust: but of the rest, the males leap the females at the first. Beares (as we sayd before) lie along both as man and woman. Hedge-hogs stand both vpright, and clasp one another when they ingender. The he Cat standeth on his feet, and the she lieth vnder him. Foxes M lyvpon their sides, and so the Bitch embraceth the male Fox. Kine and Hindes cannot well endure the violence of the Bulls and the Stagges in this businesse, and therefore they are euer going when they doe engender. Stagges goe from one Hinde to another, and then come againe to the first; and this doe they in course. Lizards, as all other creeping creatures that haue no feet, wind one about another as they ingender. The greater that any beasts be, the lesse fruitfull

A fruitfull they are of their bodie. Elephants, Camels, and Horses, get but one at once, neither do the females beare any more at a time: whereas the Goldfinch or Linnet, a verie little bird, bringeth forth a dozen commonly at once. Such as bring most, are least while in breeding. The greater that any creature is, the longer time it requireth to be formed in the mothers wombe. And such as liue long, be longer also ere they haue their perfection and come abroad into the world. The growing age is not meet for generation. Beasts that are whole hoofed, neuer bring but one at a time: such as be clouen footed in twaine, may also haue twins. But as many as haue their feet parted and deuided into many toes, are fit to beare many at ones. And wheras all the former rehearsed, bring forth perfect creatures with all parts, some haue their young ones imB perfect and but halfe made: in which number Lionesses, the Beares, bitch Foxes, are to bee reckoned: but especially the shee Beares, whose whelpes are more vnshapen than the rest: and a rare thing it is to see them a whelping. Howbeit such females when they be deliuered of them, with their licking do chafe and heat them, and so by little and little bring them to some forme and fashion by this meanes. Such for the most part beare foure whelpes. As for bitches, Wolues, Panthers, and Thoes, kindle their young before they can see.

Of Dogges and Bitches there be many kinds. They of * Laconia, as well the male as the female, be apt to engender after they be eight months old. They be with whelp threescore daies and three ordinarily. As for other Bitches, they goe proud at sixe moneths, and may be lined. They be all the sort of them, sped at the first lining, Bitches that go assaut and take the dog before the full time, namely when they be verie young, such bring a litter that will be longer ere they see: neither goe they: but all the whelps will not be blind so many daies. Dogs commonly C when they be halfe yeare old, are thought to lift vp their leg when they pisse; and that is a signe they are come to their full strength and perfection: but bitches all that time pisse sitting vpon their buttocks. They haue twelue whelps when they bring most, but ye shall see them commonly with a litter of six or fiue: and somtime they come with just one, but that it is thought to be a prodigious signe; as also if the whelpes be all Dogges or all Bitches. The first vsually that they whelpe, be Dogs; for the rest, they be one with another, a Dog and a Bitch: namely, if they were lined in the due season, and at the just moneth. And commonly they goe proud six moneths after their former litter. The Bitches of Laconia ordinarily bring eight at a time. The Dogs of this race haue a propertie with them, that the more they be trauailed, the more lustie and fresh they are, yea and the hotter after salt-bitches. They liue ten yeares, and the Bitches twelue. Of D other kinds, ye shall haue them continue fifteen yeares, yea and otherwhiles twentie: but they engender not so long, but giue ouer commonly at twelue.

Cats and Rats of Inde, called Ichneumones, in all other respects follow the Nature of Dogs, saue that they liue but six yeares. Conies kindle euery moneth: and albeit they be bagged, yet will they take the bucke againe, and conceiue vpon it; like as the Hares also will doe the same: for as soon as euer they haue kindled, they go to bucke and are presently sped: and say that the Leuerets or Rabbets lie sucking at them yet wil they be with yong. When they be new kindled, they cannot see.

Elephants (as we haue alreadie said) neuer bring but one at once, and that commonly is as big as a Calfe a quarter old. Camels goe a whole yeare. After they be 3 yeares old, they are E sufficient for to engender: and commonly they come in the spring: and it is a yeare after before they be couered againe. As for Mares, if there be three daies betweene, or but one, after they haue foled, it is thought they may very well be couered againe; yea and they are brought perforce to the stallion for this purpose. It is supposed also, that the shee Asse within seuen daies after, will sooneast conceiue. It is a rule, to share and clip a Mares maine, before shee will abide the couering of an Asse, so vile and base a beast: for so long as the haire of her maine is well growne, she is so proud and glorious, that she will not abide the Asse to come neare her. So soone as they be couered and sped, they run full into the South or North-wind, according as they be conceiued either with male or female: a thing that no other beasts besides, doth. And F then, suddainly they change their colour; for their haire will be reddder, or at leastwise fuller and deeper, what colour soeuer it be. By which signe it is knowne they are with fole, and then they will admit no stallions vnto them, would they neuer so faine. And say, that some of them haue foles running by their sides, they will doe their deed at worke neuertheless: nay when they be with fole, they will labour as well as they did before: in so much, as many times they

* Resembling our English mastiues.

steale a foling, before their master beware that they are with sole. We haue read in Chronicles, that *Echecratides* the Thessalian had a Mare, which euen then when she was gone far with sole, woone the best game in the Olympian race. They that haue sought more narrowly into the secrets of Nature, say, That stone-Horses, Dogs, and Bores, desire the females in a morning: but Mares, Bitches, and Sowes make meanes to the male after noone. Mares that are kept within house at rack and manger with hay and prouender, desire to be couered three score daies before those that goe abroad in the heard. Swine alone of all creatures when they be brimming, froth and fome at the mouth. And as for the Bore, if he heare the grunting of a Sow that seekes to be brimmed, vnlesse he may come to her, will forsake his meat, vntill he be leane and poore: and she againe will be so far enraged, that shee will be readie to run vpon a man and all to teare him, especially if his cloths be white. But this rage and woodnesse of hers is asswaged and allaied, only with bathing her share behind with vineger. Some thinke there be certaine meats will prouoke beasts to fleshly lust, namely, Onions giuen in meat to a beast; like as Rocket to a man or woman. Moreouer, it is supposed, that whatsoeuer is made tame which by kind was wild, the same will not breed, as Geese and Ganders. In like manner, wild Swine & red Deere, if they be tamed; or if they doe, it is very long first: and such only as were brought to hand euen from the time that they were very yong. Finally, this one thing is strange and wonderfull, that all foure-footed beasts, saue only the Mare and the Sow, if they find themselues to be with yong, driue the male from them. But the Connie and the Hare alone will conceiue again when they be gone with yong.

G H I

Chap. LXIIII.

¶ *The varietie in liuing creatures, as touching their comming in to the world.*

WHatsoeuer haue quicke creatures within them, bring the same forth with the head forward. For when the time is come, the yong thing turns about a little before, which otherwise lay streight out at length in the bellie. Four-footed beasts, whiles their dams go with them, lie with their legs stretched along, close vnto their own bellies. An infant whiles it is in the mothers wombe, gathereth round into a ball, and hath his nose lying just betweene his two knees. As for false conceptions or Moone-calues (wherof we spake before) some thinke they are engendred of the womans seed only: namely, when she is not conceiued by a man, but by her selfe: and hereupon it is, that the said conception hath no vitall nor animall life, because it proceeds not of the conjunction of male and female both. True it is, that it is endued with a certain vegetatiue power, to be nourished and to grow, like as we see introes and many other plants.

K

Chap. LXV.

¶ *The breed of Mice and Rats.*

OF all creatures that bring forth their young perfect, Swine only farrow one Pig and two Pigs at a time, yea, and somtimes a number of them. Also they alone contrarie to the nature of all those that either be whole-hoofed, or clouen-footed in twaine, bring a number of yong ones at one farrow. But aboue all, Mice and Rats for fruitfulnesse do passe. And therefore I cannot put off the discourse of them any longer: and yet therin I must follow *Aristotle* for mine Author, and the report withall of the souldiers that serued vnder *Alexander* the great. It is said that they engender by licking, without any other kind of copulation: and that one of them hath brought six-score at a time: also that in Persia there haue been young Mice found with yong, euen in the bellie of the old dam. And some are of opinion, that they will be bagged, if they tast but of a little salt. Why should wee then wonder any more how such multitudes of field-Mice and Rats should come to deuour whole fields of corne? Howbeit, the reason is not yet known, how such numbers of them should al of a sudden consume away & come to nothing. For neither bee they found lying dead aboue ground, neither can any man come forth and say, that he hath turned vp any one with his spade as he digged in the Winter. The countrey of Troas is mightily giuen to breed great store of them, insomuch, as they haue forced alreadie the inhabitants to abandon the place and depart. Men say, that the season proper and

L M

A and agreeable for their breeding in such aboundance, is a great drought: also, that when they are toward their end, there be little wormes breeding in their heads that kill them. The Mice and Rats of Ægypt haue hard haire and pricky like to hedge-hogs. They go likewise vpright on their hinder feet, and walk as if they were two footed, after the manner of those in the Alps. Moreouer, if beasts of diuers kinds ingender together, they may wel breed yong between them; in case they do agree and jump in the time that the females of both should go with yong. It is commonly thought and beleeued, that among foure footed beasts the Lizard hath egs within her, and deliuereth them at her mouth; but *Aristotle* flatly denieth it. Howbeit they sit not vpon them when they haue so done, as being forgetful where they laid them, so little or no memorie at all haue they. And therefore the yong Lizards of themselues breake forth out of the
B shell.

Chap. LXVI.

¶ *Of a Serpent ingendred of the marrow of a mans back bone.*

I Haue heard many a man say, that the marrow of a mans backe bone will breed to a Snake. And well it may so be, for surely there be many secrets in Nature to vs vnknown, and much may come of hidden causes, as we may see euen among foure footed beasts.

Chap. LXVII.

¶ *Of the Salamander.*

C AS for example, the Salamander made in fashion of a Lizard, marked with spots like starres, neuer comes abroad and sheweth it selfe but in great shewres: for in faire weather he is not seen. He is of so cold a complexion, that if he do but touch the fire, he will quench it as presently as if ice were put vnto it. The Salamander casteth vp at the mouth a certaine venomous matter like milke, let it but once touch any bare part of a man or womans body, all the haire will fall off, and the part so touched will change the colour of the skinne to the white morphew.

Chap. LXVIII.

D ¶ *Of those that breed of others which neuer were ingendred. Also of those that being ingendred, yet breed not.*

SOme creatures there be that breed of those that neuer were ingendred themselues; and yet not according to those naturall means as others which wee haue shewed before; and such also as either the Summer or Spring, or some certain season of the yeare do breed. Among which some ingender not at all, as the Salamander: * for there is no more distinction of sex in them, than in Yeeles, and in all those which neither lay egs, ne yet bring forth any liuing creature. Oisters likewise and all such creatures as cleaue fast either to rockes or to the shelues, are neither male nor female. As for such as come of themselues, if there be seene in them any di-
E stinction of male and female, somthing verily they ingender betweene them; but an imperfect creature verily it is, and not resembling them: neither doth that generation breed ought any more, as we see the flies that ingender certain little wormes. The experience hereof is better to be obserued in those creatures called Insects: whose nature is hard to be expressed, and yet I haue appointed a seuerall treatise for them apart. Wherefore I will go forward in the discourse begun already, and namely as touching the sence and vnderstanding of the forenamed Creatures, and then proceed to the rest.

* Which is found vntrue by experience.

Chap. LXIX.

F ¶ *The outward sences of liuing Creatures.*

MAn excelleth all other Creatures, first in the sence of feeling, and then of tasting: In the rest many beasts go beyond him. For the Ægles haue a clearer eie-sight, the Geires a finer smell; and the Moldwarps, notwithstanding they be couered ouer with earth (so heauie,

heauie,so thick and deafe an element as it is)yet their eare is far better than ours. Moreouer,albeit the voice of all them that speake aboue ground doth ascend vpward still from them, yet heare they when they talke,yea and if a man chance to speake of them,some hold that they vnderstand their speech,and thereupon do fly from them. A man,who at first lacketh his hearing, wanteth also the vse of his tongue: neither are there any deafe borne,but the same likewise be dumbe. A man would not think,neither is it likely, that the Oisters in the sea do heare,and yet vpon any noise and sound their manner is to sink down to the bottome. And therefore when as men do fish for them in the sea they are as silent as they may be.

Chap. LXX.

¶ *A discourse, That fishes both heare and also smell.*

Fishes verily haue no eares,ne yet any holes to serue for hearing;and yet plain it is that they doe heare, as we may daily see in certaine fish ponds and stewes where fishes be kept: for when those that haue the charge of them make a noise with clapping of their hands, as wild as they be otherwise,they shall haue them come in great flocks to take their meat that is thrown in to them: and this are they wont to do daily: and that which more is, in *Cæsars* Fishpooles a man may see whole skuls of fishes to repaire at their call: yea, and some wil part from the rest of their company,and come alone to land when they be named. Hereupon it is,that the Mullet,sea-Pike,Stock-fish,and Chronius,are thought to heare best of all others,and therfore liue very ebbe among the shelues and shallowes. That fishes haue the sence of smelling it is manifest: for they are not all taken ne yet delighted with one kinde of bait: and this is obserued,that before they bite they will smel to it. Some also there be that lie in holes vnder rocks, and no sooner hath the fisher besmeared and anointed the mouth and sides of the said rocks in the very entrance to their holes,but he shall see them come forth,as it were to auoid the sent of their own carion. Let them lie in the very deep,yet wil they resort to certain odors and smells, namely,to the Cuttill burnt,and the Polype, which for that purpose they vse to put into their nests. And verily they cannot abide the smel of the sinke and pumpe of a ship,neither wil they come neere vnto it: but aboue all things they may not away with the bloud of fish. The Pourcuttle hardly or not at all can be pulled from the rocks,so fast cleaueth he: howbeit come neer him with the herb Marjerome or Sauorie,he will presently leape from the rocke and away,to auoid the sent thereof. Purples also be caught by means of some stinking bait. And for other creatures,who doubteth but they haue a perfect smell? Serpents are chased away with the smell and perfume of the Harts horn; but aboue all, with the odor of Styrax. And Pismires are killed with the very fume of Origon,Quick-lime,or Brimstone. Gnats loue all sour things, and willingly will thither: but to any sweet meats they come not neare.

Chap. LXXI.

¶ *That the sence of feeling is common to all liuing creatures.*

There is not a liuing creature throughout the world but hath the sence of feeling, though it haue none els: for euen oisters and earth-wormes,if a man touch them doe euidently feele. I would think also that there is none but tasteth as wel as feeles. For what should the reason else be,that some desire to tast this, others that? And verily herein is seene aboue all the singular workmanship of Nature, in the frame of their bodies and the members thereof. Some ye shall haue to seise vpon their prey with their teeth,others snatch it with their talons and clawes: some peck and pluck it with their hookt bils, others pudder into their food with their broad nebs. Some with the sharp point of their beaks worke holes into their meat; others lie sucking at it. Some lick,others sup in: to conclude, some chew,others swallow and deuoure whole as it is. As touching their feet, there is no lesse varietie in the vse thereof: in snatching and carrying away,in tearing and plucking a pieces,in holding fast,and in crushing their prey. Some ye shall haue to hang by their feet,and others neuer lin scraping and scratching the earth.

CHAP.

Chap. LXXII.

¶ *What creatures liue of poison,and what of earth.*

Roe Bucks and Does,yea,and Quailes(as we haue said before) will feed fat with poisons; and yet they are the most meeke and gentle creatures liuing. Serpents haue a great desire and loue to egs;wherein the subtilty of Dragons is worthy to be considered. For either they swallow them downe whole (if their throat will receiue them) and after they haue wrung their body,breake and squize them in pieces with rolling and winding themselues vpon them, and then cast vp the shels againe: or if they be but young ones yet, and not able to gobble vp whole egs,then they will winde about an egge with their taile by little and little, and bind it so hard,that they wil cut off the crowne of it,as it were with a knife,and then sup vp the rest which they clasp and hold fast between. In like manner deale they with birds. For swallow they will them whole downe the gullet,and afterwards straine and struggle so with themselues vntill they disgorge again the feathers and bones that were in their bellies.

Scorpions feed vpon earth. And Serpents againe,it they may come handsomly to wine, will make means to drink their fil of it,how soeuer otherwise they haue but little need of any drink. They eat no meat at all,or very little,when they be kept close within any thing: like as the spiders also,which otherwise naturally liue by sucking. And therefore you shall not lightly see any venomous creature die either of hunger or thirst. For neither haue they store of heat,nor plenty of bloud,ne yet of sweat: all which naturally prouoke a stomack,& giue an edge to appetite. And among these venomous creatures,those be euer more dangerous which haue eaten some of their own kind,before they bite or sting. Apes,Monkies,and Marmosets bestow and treasure vp the meat that is giuen them,or that they can come by, within their cheeks,as in a store-house. And when they be hungry,they get the same forth by little and little with their hands,& so fal to chew it. Thus practise they in making their prouision,for to serue them from day to day,and from one houre to another: which Pismires vsually do from yeare to yeare.

Chap. LXXIII.

¶ *The meat and drinke of some creatures.*

Of all liuing creatures that haue many toes in their feet,the Hare alone feeds vpon grasse and greene corne in the blade. As for those that be whole hoofed,they liue both of the blade,and also of the fruit thereof. Also of such as be clouen footed, Swine will eat all kind of food,yea,and liue of very roots. It is the property of whole hoofed beasts alone,to wallow and turn ouer and ouer. All that haue teeth indented in like saws,be naturally deuourers of flesh. Bears wil feed of corn,brouse trees,eat grapes,liue of apples and other fruits, feed vpon bees,creifishes,and pismires. Wolues(as we said before) if they be very hungr ,eat earth: sheep feed the better & grow fat,if they may drink;and therfore salt is very good for them,because it makes them thirsty. Draught beasts,and such as are vsed for carriage, albeit they liue of corne and grasse,yet according to their drinking they do feed. Besides those mentioned hertofore, of wild beasts the red and fallow Deere both, doe chew cud when they be made tame and fed by hand: but all chuse rather in so doing,to lie than to stand,& in winter more than in summer, for seuen months ordinarily. The rats and mice in the country of Pontus,namely, Hermins,& such like,after the same maner do chew cud and go ouer their meat again. What beasts soeuer are toothed like saw teeth,lap as they drinke. So do also our common mice and rats,although they be of another kind,and are not so toothed. They that haue broad teeth,plaine, and vniforme,as horses and kine,drinke supping and taking their ful draught Bears in their drinking do neither the one nor the other,but bite at the water and so let it down. In Affrick the more part of wild beasts drink not all summer long,for want of raine water: which is the cause that the Rats and Mice of Ginnie which be taken,if they drink afterwards vpon so long disuse, die therewith. In the desarts of Affrick,where there is no water euer to be had,there is ingendred a certain wilde goat named Oryx,which as by the nature of the place it wanteth drink,so it hath in her bodie a soueraine and singular remedy against drought and thirst. Which the common theeues & robbers by the high way side in Getulia,knowing well enough,endure a long time with the helpe thereof

thereof without drinke; for they vſe to ſtanch and quench their own thirſt, with a certain moiſt holeſome liquour found in the bladders of the ſaid beaſt. In the ſame Affricke the Leopards lie in await among the thickets of trees, hidden within the branches; and ſo ſeize vpon them that paſſe by, and make ſpoile euen from the place where fouls vſe to perch. As for Cats, marke I pray you how ſilent they be, how ſoft they tread when they ſteale vpon the ſilly birds: how ſecret lie they in eſpiall for the poore little mice to leap vpon them. Their owne dounge and excrements they will rake vp and hide in the earth, knowing full well, that the ſmell thereof will bewray where they are.

CHAP. LXXIIII.

¶ *What beaſts accord together, and which they be that diſagree one from another.*

BEſides theſe outward fences aboue named, euident it is alſo, that brute beaſts haue other inſtincts of nature. For they entertain friendſhip and enmity one with another (which cannot be without affection and paſſion) ouer and beſides thoſe other wars and amities which wee haue obſerued in their ſeuerall places. Swans and Ægles jar and war one with another: ſo doth the Rauen and the Witwall or Loriot, which ſeeke after one anothers egs in the night. Likewiſe the Rauen and Kite: for the Rauen is euermore ready to catch the Kites meat from him. Crowes and Owles are at mortall feaud one with another. The roiall Ægle hateth the Wren, and why? becauſe (if we may beleeue it) he is named Regulus (*i.* the pettie king.) Howlets alſo cannot agree with other little birds. Again, foules make warre with foure-footed beaſts. The Weaſell and the Crow be at deadly debate. The Turtle with the Creckit (Pyralis) that liueth about the fire. The Ichneumons with Waſpes: the Phalangia with other Spiders. And among water foules, Ducks and Drakes with the ſea-guls. The Seamews with the Buzzard Triorchis. As for the field Rats or Mice, and the dwarf-Herons, they ſeeke to prey one vpon the others little ones. The bird Ægithus (the leaſt in maner of all others) waiteth the Aſſe a ſhrewd turn; for when he rubbeth himſelf againſt the buſhes to ſcratch where it itcheth, he therewith breaketh and ouerthroweth her neſt; and therefore this ſilly bird is ſo much afraid of the Aſſe, that if ſhe heare him but bray, ſhe is ready to throw the egs out of her neſt, and thoſe that be already hatched, will for very feare fall downe: then in reuenge of this wrong, ſhe will flie vpon him, and with her bill peck where the skin is off and raw with rubbing, yea, and make holes euen to the very bone. Moreouer, Foxes and the Yeeles of Nilus cannot abide one another, but are in continuall war. So be Wezils and Swine. There is an vnhappy bird called Æſalon, and but little withall; yet will ſhe ſquaſh and breake the Rauens egs. And when ſhe hath yong ones, they bee much troubled and annoied with Foxes: ſhe again to be quit with them, will all to pinch & nip both the Fox and her cubs. The Rauens ſeeing that, come to aid (as it were) againſt a common enemy. The Gold-finch liueth among buſhes and thorns, and therefore ſhe alſo hates the Aſſe, becauſe he eateth vp the floures that grow therupon. The bird Ægithus, ſo far hateth another called Anthus, that men are verily perſuaded the bloud of them both will not mingle together: and hereupon it is, that the ſorcerers and witches haue brought it into an ill name. The Thoes and the Lions do fouly jarre and diſagree. In ſumme, the leaſt creatures as well as the biggeſt quarrell and fight one with another. Rats and field Mice cannot abide to come neere a tree that is full of Ant-neſts. The Spider eſpying a Serpent lying along vnder the ſhade of a tree where ſhe ſpinneth, ſlideth down vpon a fine thred to the head of the Serpent, and ſtingeth him ſo deep into the braine, that he falleth a hiſſing and grinding his teeth: he keepeth a winding and turning about, but hath not the power to breake the thred that hangeth aboue, ne yet to fly from the Spider: inſomuch, as the Serpent lieth there dead in the place. Contrariwiſe, Peacocks and Houſe-doues be as friendly one to another: ſo be the Turtles and Popinjaies, the Merles and Turtles likewiſe. The Crow and the leſſe Bittours alſo: for they ioine and band together againſt the common enemy the Fox. Likewiſe, the bird-Harpe and the Kite againſt the Buzzard. What will ye ſay? be there not tokens of affection euen in Serpents, the cruelleſt and felleſt creatures of all others in the world? I haue written already of the report or tale that goeth in Arcadia of a man, whoſe life was ſaued by a Dragon (that was brought vp by him) ſo ſoon as euer he knew him by his voice. As for the Aſpis, *Philarchus* telleth a ſtrange hiſtory of it.

it. For he writeth, that in Ægypt there was an Aſpis vſed ordinarily to come to the table of a certaine Egyptian, and there tooke meat at his hand: which Serpent afterwards had yong ones, whereof one chanced to ſting a ſon of the maſter of the houſe, that he died of it. Now when the dam (the old Aſpis) came accordingly at the accuſtomed houre of repaſt for victuals, and perceiued the deed committed by her little one; not onely killed it in ſatisfaction of the former fact, but alſo forbare the houſe, and was neuer knowne to repaire thither againe.

CHAP. LXXV.

¶ *The ſleepe of liuing creatures.*

THe queſtion, Whether liuing creatures ſleep or no? is not very difficult, but ſoon decided: For plain it is, that of land creatures, all that winke and cloſe their eies doe ſleepe. As for thoſe in the water, that they alſo ſleepe (though but a little) euen they are of opinion who otherwiſe make doubt of the reſt. And this they do not collect & gather by their eies (for lids they haue none to ſhut) but becauſe they are ſeene to lie ſo ſtill and quiet, as faſt and ſound aſleep, ſtirring no part, but a little wagging their tailes, and ſeeming to ſtart and bee affright at any ſudden noiſe made in the water. As for the Tunnies, we may auouch more confidently of their repoſe: for they come of purpoſe to ſleep vnder the banks or rocks. And flat broad fiſhes lie ſo ſtill ſleeping among the ſhelues, that oftentimes a man may take them vp with his hand. The Dolphins and Whales be heard to rout and ſnort again, they ſleepe ſo ſoundly. Moreouer, as touching Inſects, no man need to doubt that they ſleep, ſo quietly do they lie and make no noiſe: nay, if you bring a candle or other light, and ſet it euen before their eies; you ſhall not haue them to awake nor moue. An infant after it is borne, ſleepeth for certaine moneths at the firſt, and in manner doth nothing els. But the elder hee waxeth, wakefull is he euery day more than other. Babes at the very beginning do dreame. For they will waken and ſtart ſuddenly in a fright; and as they lie aſleep, keep a ſucking of their lips, as if it were at the breaſt heads. Some neuer dream at all. And if ſuch chance contrary to this cuſtome, for to dreame once, it hath bin counted for a ſigne of death, as we haue ſeene and prooued by many examples and experiments. And here in this place there offereth it ſelfe a great queſtion, and very diſputable *pro & contra*, grounded vpon many experiments of both ſides: namely, whether the ſoule of man while the body is at reſt, foreſeeth things to come? and how it ſhould ſo do? or whether this be a thing of meere chance and altogether coniecturall, as many others be? And ſurely if we go by hiſtories, we may find as many of the one ſide as the other. Howbeit all men in manner agree in this, That dreames either immediatly vpon drinking wine and full ſtomacke, or els after the firſt ſleep, are vaine and of no effect. As for ſleep it is nothing els but a retreat and withdrawing of the ſoule into the mids of it ſelfe. Euident it is, that Horſes, Dogs, Kine, Oxen, ſheep, and goats do dreame. Whereupon it is credibly alſo thought, that all creatures which bring forth their yong quicke and liuing, do the ſame. As for thoſe that lay egges, it is not ſo certaine that they dreame: but reſolued it is, that they all do ſleep. Now let vs paſſe and proceed to the treatiſe of Inſects.

THE ELEVENTH BOOKE OF THE HISTORIE OF NATVRE, WRITTEN BY C. PLINIVS SECVNDVS.

The Proeme.

IT remaineth now to write of those liuing creatures, which are the most subtill of all others that Nature hath brought forth: for asmuch as some are of opinion, That they breath not, ne yet haue any bloud at all.

CHAP. I.

¶ *Of Insects in generall.*

MAny and sundry sorts there be of Insects, as well among land creatures as those that fly in the aire. Some are winged, as bees: some haue partly wings and partly feet, as Pismires: others want both, and neither flie nor go on their feet. And wel may they all be called *Insecta*: by reason of those cuts and diuisions, which some haue about the necke; others in the breast and belly; the which do go round and part the members of the body, hanging together onely by a little pipe and fistulous conueiance. There be of them, that haue not the body diuided entire, one part from the other by these incisures, cuts, and wrinckles; but they appeare only either vnder the belly, or vpon the backe aboue, and go no deeper, neither yet round the whole compasse of the body. But a man shall perceiue in them certaine rings or circles, apt to bend and wind to and fro, and those so plated and plaited one ouer another, that in nothing elswhere is more seen the workmanship of Nature, than in the artificiall composition of these little bodies.

CHAP. II.

¶ *The industrie and subtiltie of Nature in framing these Insects.*

IN bodies of any bignes, or at least-wise in those of the greater sort, Nature hadno hard piece of work to procreate, forme, and bring all parts to perfection; by reason that the matter whereof they be wrought, is pliable and will follow as she would haue it. But in these so little bodies (nay pricks and specks rather than bodies indeed) how can one comprehend the reason, the power, and the inexplicable perfection that Nature hath therin shewed? How hath she bestowed all the fiue senses in a Gnat? and yet some there be, lesse creatures than they. But (I say) where hath she made the seat of her eies to see before it: where hath she set & disposed the taste? where hath she placed and inserted the instrument and organ of smelling? and aboue all, where hath she disposed that dreadful and terrible noise that it maketh, that wonderfull great sound (I say) in proportion of so little a body? can there be deuised a thing more finely & cunningly wrought than the wings set to her body? Marke what long-shanked legs aboue ordinary she hath giuen vnto them. See how she hath set that hungry hollow concauitie in stead of a belly: & hath made the same so thirstie and greedy after bloud, and mans especially. Come to the weapon that it hath to pricke, pierce, and enter through the skinne; how artificially hath shee pointed and sharpened it? and being so little as it is (as hardly the fineneſse thereof cannot be seen) yet as if it were of bigneſse & capacity answerable, framed it she hath most cunningly for a twofold vse: to wit, most sharpe pointed, to pricke and enter; and withall, hollow like a pipe for to sucke in and

A and conuey the bloud through it. Come to the Wood-worme, what manner of teeth hath Nature giuen it, to bore holes and eat into the very heart of hard Oke? who heareth not the sound that she makes whiles she is at her work? For in wood and timber is in manner all her feeding. We make a wonder at the monstrous and mighty shoulders of Elephants, able to carry turrets vpon them. We maruell at the strong and stiffe necks of buls, and to see how terribly they will take vp things and tosse them aloft into the aire with their hornes. We keepe a wondering at the rauening of Tygres, and in the shag manes of Lions: and yet in comparison of these Insects there is nothing wherein Nature and her whole power is more seene, neither sheweth she her might more than in the least creatures of all. I would request therfore the Readers, that in perusing this treatise, they will not come with a preiudicate opinion, nor (because many of these
B silly flies and wormes be contemptible in their eies) disdaine, loath, and contemne the reports that I shall make thereof; seeing there is nothing either in Natures workes that may seeme superfluous, or in her order vnworthy our speculation.

CHAP. III.

¶ *Whether Insects do breath, and whether they haue bloud or no?*

DIuers haue denied that they breath at all; and vpon this reason they ground their position, Because they haue no arterie or wind-pipe annexed or reaching to any instrument within of respiration. And they be of opinion, that they liue indeed as plants, herbes, and trees: howbeit (say they) there is a great difference betweene hauing life, and drawing wind or vitall
C breath. And by the same rule they affirme, that they haue no bloud, which is in none that bee without heart and liuer. Neither do any things breath which want lungs. And from hence ariseth a world of other questions thereupon depending. For the same men deny flatly, that these creatures haue any voice: notwithstanding so great humming of bees, & singing sound of grashoppers, and such other, whereof we will consider in due time & place, accordingly. Verily for mine owne part, the more I looke into Natures workes, the sooner am I induced to beleeue of her euen those things that seem incredible. Neither do I see any inconvenience to thinke, that these Insects may as well draw wind and breath without lungs, as liue without such nobleand principall parts as are requisite for life in other creatures: according as we haue already shewed
D in the discourse of fishes and such like, that liue in the sea; how soeuer the quantitie, depth, and heights of the water, may seeme to impeach and stop their breath. For who would easily beleeue, that some creatures should flie at libertie, and liuing as they do in the mids of wind and aire, yet want wind and breath themselues? that they should haue a sense and care to seek their liuing, to engender, to worke, and to forecast for the time to come: and howbeit they haue no distinct members, to carry (as it were in a ship) their seuerall fences, yet that they should heare, smell, and taste, yea and be indued with other singular gifts besides of Nature, to wit, wisdome, courage, skill, and industrie. Indeed, confesse I must, that bloud they haue none: no more haue all creatures that liue vpon the land; howbeit a moist humor they haue, somewhat like vnto bloud, which serues them in stead thereof. Like as in Cuttels of the sea, there is found a certain blacke liquor in stead of bloud: and in all the sort of Purples and such shel fishes, that excellent
E iuice which staineth & dieth so as it doth. Semblably in these Insects, what soeuer humor it is, whereby they liue, the same may well enough go for bloud and so be called: all the while that euery man hath liberty to giue it what name he thinketh fitteſt. As for me, my purpose is not to judge and determine of these doubtfull quillets, and their causes; but to set down and shew the nature of such things as be cleare and apparent.

CHAP. IIII.

¶ *The substance of the body in these Insects.*

F THese Insects, so far as a man may perceiue, seeme not to haue either sinewes or bones, no chine nor griſtle, no fat, no flesh, ne yet so much as a tender and brittle shell, as some Seafishes haue, nor that which may be truly called a skin; but a certain corporal substance of a middle nature between all these: for their body without, is like a dry thing, and yet more tender and soft than a sinew: whereas in all other parts the matter is to be accounted rather drie than

than hard. This is the very substance whereof they consist, and nothing haue they besides. For within there is nought, vnlesse it be in some very few, who haue a certaine pipe or conduit in stead of a gut, & the same wrapped and infolded together. Which is the cause, that if they be cut in two and pulled in pieces, yet they haue a speciall property to liue long, and each part asunder wil pant & stir by it selfe. The reason is, because the vitall vertue in them (whatsoeuer it is) is not seated in any one member, this or that, but spred and defused throughout the whole body, and least apparent in the head, of all other parts: for, that alone, vnlesse it be plucked away together with the breast, moueth not one jot. No kind of creatures haue more feet than these: and the more they haue, the longer liue they when they be diuided asunder; as we see by experience in the Scolopendres. Eies they haue, that is certain; & besides sight, they are not without the sences of feeling & tasting: some there be that smell, & a few that haue their hearing also.

Chap. V.

¶ *Of Bees.*

BVt among them all, Bees are principall, and by good right deserue especiall admiration, as being the only Insects ordained by Nature for mans vse. They gather honie, a most sweet, pleasant, fine, and wholesome liquor. They frame the hony combs, and work the wax, which serue for a thousand turns in this life. They indure pains continually, and dispatch their worke and businesse. They haue a policie and Commonwealth among themselues. They hold their seuerall counsels: and there is not a swarme or cast that they haue, without a king and captaine of their owne: and that which is most admirable of all, there be ciuill fashions and customes among them. Moreouer, being as they are, neither tame and gentle, nor yet to be counted wilde and sauage, yet (see the wondrous worke of Nature!) by the means of so little a creature, nay, a shadow rather (to say a truth) of the least creature, she hath effected a thing incomparable: what strength of sinewes, what force and puissance is able to countervaile this so great industry and effectuall power of theirs? What wit and policy of man is answerable to their discreet and orderly course? Beleeue me, they passe them all, and in this one point surpasse, That all things are common among them, and nothing know they priuat and seueral. What should we debate and make question any more as touching their breath? Why should wee dispute of their bloud, which cannot chuse but be very little in such smal bodies? Let vs rather consider henceforth their wit, and the gifts of their mind.

Chap. VI.

¶ *The naturall order and regiment that is in Bees.*

BEes all winter time keep close within their hiues: and good reason; for how possibly should they indure hard frost and chilling snow? how should they abide the piercing blasts of the North winds? And verily it is the manner of all these Insects so to doe, but yet they keepe not in so long. For why? being nestled warm as they are within our houses, they sooner doe recouer their vigor, & come abroad betimes. But as concerning Bees, either the times haue changed, & places altered their course, or els the writers before time of this argument haue greatly erred. They begin to retire themselues and take vp their wintering harbor, presently vpon the setting and occultation of the star Vergiliæ; and come not forth into the field againe, vntill after the rising and apparition thereof. So that Bees go not abroad at the very beginning of the Spring, as Writers haue set downe (for who seeth not the contrary throughout all Italie) but remaine still close and secret, vntil that Beanes begin to bloom; before which time they settle not themselues to any worke or labour. But from thence forward, they lose not a day, they slack not their painful trauel, neither play they one jot, if the weather be faire & wil permit: the first thing they do, is to make their combs & wax, that is to say, their own habitations & storehouses. When they are prouided of lodging, they thinke vpon the multiplying of their owne kind: and finally, they gather and make both hony and wax: the substance whereof they sucke from the floures of trees and hearbes, from the gums also of trees which breed such gluie matter; and besides, out of the iuice, gum, and rosin of the willow, elme, and cane. With these and such like, they plaister all the hiue within throughout, as it were with a coat or parget, intermingling

A gling withall other iuices that are more vnsauorie, gathered from the bitterest hearbs they can get: to the end that they might keepe out other little vermines that are greedy of their hony: as knowing full well, that they are about a piece of worke which is worthie to be desired and sought after. Of this gummy and glutinous substance they frame also their dores and entries which are wide and large.

Chap. VII.

¶ *The proper termes belonging to their worke.*

THe first foundation of their worke, skilfull hony-masters do call Commosis: the second Pissoceros: the third Propolis, which lieth between those former coats and the wax of the hony combe, whereof there is so great vse in Physicke. Commosis is the first coat or cruste of a bitter taste. Pissoceros commeth next after it, as it were a thinner course of pitch or varnish and a weaker kinde of wax, made of the more liquid and mild gum of vines and poplars. But Propolis consisteth of a more solid matter, as hauing the strength of some floures withall: howbeit, as yet it is no ful and perfect wax, but the foundation and strengthening of the combs: and serueth as a good defence against cold, and to stop the passage of waspes and such hurtful creatures as would do iniurie to the bees, for stil a strong sent it carrieth, as which, many men do vse in stead of Galbanum. After this munition done, then followeth the prouision of that which is called Erithace, some terme it Sandaracha, and others, Cerinthus. This must serue for the bees meat, whereof they are to liue whiles they worke: and found it is oftentimes, laid apart within the concauities of their combs, it being also of a bitter taste. Now this Erithace commeth of the * Spring-dew, and the moisture issuing out of trees in manner of gum: in lesse abundance euer, when the South-west wind blows: but when it is full South, more blacke: and in the Northerly constitution, far better and more red withall. Great store hereof, Bees meet with vpon Almond trees. *Menecrates* saith, That it is a floure foreshewing what haruest shall insue: * but no man saith so besides him.

* *Rore vernō* or Sea-dew, *Rore marino.*

* Being deceiued with the Homonymie of the word *Cerinthus*, which hath a double signification.

Chap. VIII.

¶ *What flowers they be which Bees serue themselues most withall for their worke.*

AS for wax, Bees gather and make it of the floures of all trees, herbs, and plants, sauing the docke and * Goose-foot, which are two kinds of herbs. Some except also a kind of Broom called Spart, but vntruly: for in Spaine (where there be many places full of that shrub) the honie carrieth the strength thereof in the taste. I am besides of opinion, that they be deceiued who thinke that bees gather not of Oliue trees. For we see it ordinary, that there be more casts and swarmes of Bees where Oliues grow in greater abundance. These pretty creatures hurt no fruit whatsoeuer. They will not settle vpon a floure that is faded, and much lesse of any dead carkasse. They vse not to go from their hiue about their busines aboue 60 paces: & if it chance, that within the precinct of these limits they finde not floures sufficient: out goe their spies, whom they send forth to discouer forage farther off. If in this expedition, before they come home againe, they be ouertaken by the night, they couch vpon their backes for feare lest their wings should be ouercharged with the euening dew, and so they watch all night vntill the morning.

* Chenopòdes.

Chap. IX.

¶ *Those that haue taken a speciall pleasure in Bees.*

SVch is the industrie of this creature, that no man need to wonder at those two persons who delighted so much in them, that the one (namely *Aristomachus* of Soli) for threescore yeares lacking but twaine, did nothing else but keep bees. and *Philiscus* the Thasian employed the whole time of his life in Forrests and Desarts, to follow these little animals: whereupon hee was surnamed *Agrius*. And both these vpon their knowledge and experience, wrote of Bees.

Chap. X.

¶ *The order that they keepe in their worke.*

THe manner of their businesse is this. All the day time they haue a standing watch & ward at their gates, much like to the *corps de guard* in a campe. In the night they rest vntill the morning: by which time, one of them awaketh and raiseth all the rest with two or three big hums or buzzes that it giues, to warn them as it were with sound of trumpet. At which signall giuen, the whole troupe prepares to flie forth, if it be a faire and calme day toward, for they doe both foresee, and also foreshew when it will bee either windie or rainie, and then will they keepe within their strength and fort. Now when the weather is temperate (which they foreknow well enough) and that the whole armie is on foot and marched abroad, some gather together the vertue of the floures within their feet and legges: others fil their gorge with water, and charge the downe of their whole body with drops of such liquor. The yonger sort of them go forth to worke, and carry such stuffe as is beforenamed, whiles the elder labor & build within the hiue. Such as carry the floures abouesaid, stuffe the inner parts of their legs behind (and those Nature for that purpose hath made rough) with the help of their forefeet: & those again are charged full by the means of their muffle. Thus being full laden with their prouision, they return home to the hiue, drawne euen together round as it were in a heap, with their burden: by which time, there be three or foure ready to receiue them, and those ease and discharge them of their lode. For this you must thinke, that they haue their seuerall offices within. Some are busie in building, others in plaistering and ouercasting, to make all smooth and fine: some be at hand to serue the workemen with stuffe that they need; others are occupied in getting ready meat and victuals out of that prouision which is brought in: for they feed not by themselues, but take their repast together, because they should both labour and eat alike, and at the same houre. As touching the maner of their building, they begin first aboue to make arch-work embowed, in their combs, and draw the frame of their work downward; where they make two little allies for euery arch or vault, the one to enter in by, the other to go forth at. The combs ithat are fastened together in the vpper part, yea and on the sides, are vnited a little, and hang all together. They touch not the hiue at all, nor ioin to it. Sometime they are built round, otherwhiles winding bias, according to the proportion of the hiue. A man shll find in one hiue hony combs somtime of two sorts: namely, when two swarms of bees accord together: and yet each one haue their rites and fashions by themselues. For feare lest their combs of wax should be ready to fal, they vphold them with partition wals, arched hollow from the bottom vpward, to the end that they might haue passage euery way to repaire them. The formost ranks of their combes in the forefront, commonly are built void and with nothing in them, because they should giue no occasion for a theefe to enter vpon their labours. Those in the backe part of the hiue, are euer full-left of hony: and therefore when men would take out any combes, they turne vp the hiues behind. Bees that are employed in carrying of hony, chuse alwaies to haue the wind with them, if they can. If haply there do arise a tempest or a storm whiles they be abroad, they catch vp some little stony greet to ballance and poise themselues against the wind. Some say, that they take it and lay it vpon their shoulders. And withall, they flie low by the ground vnder the wind when it is against them, and keep along the bushes, to breake the force thereof. A wonder it is to see and obserue the manner of their worke. They mark and note the slow-backs, they chastise them anon, yea, and afterwards punish them with death. No lesse wonderful also it is to consider how neat and clean they be. All filth and trumperie they remoue out of the way: no foule thing, no ordure lieth in the hiue to hinder their businesse. As for the doung and excrements of such as are working within, they be laid all on a heap in some by-corner, because they should not goe far from their worke: and in foule weather (when otherwise they haue nought to do) they turn it forth. Toward euening, their noise beginneth to slacke and grow lesse and lesse: vntill such time as one of them flieth about with the same loud humming, wherewith she waked them in the morning, and thereby giueth a signal (as it were) and commandement for to go to rest: much after the order in a camp. And then of a sudden they are all husht and silent.

CHAP.

Chap. XI.

¶ *Of the drone Bees.*

THe houses and habitations that Bees build first, are for the Commons: which being finished, they set in hand with a pallace for their king. If they foresee that it will be a good season, and that they are like to gather store of prouision, they make pauilions also for the Drones. And albeit they be of themselues bigger than the very bees, yet take they vp the least lodgings. Now these drones be without any sting at all, as one would say vnperfect bees, & the last fruit of such old ones as are weary and able to do no more good; the very later brood & increase, and to say a truth, no better than slaues to the right bees indeed. And therefore the others as master Bees ouer them, haue them at their commandment: if any drudgery or such like businesse is to be don, out are they sent first: make they but slow hast in that they are set about, sure they are to pay for it, and to be punished without mercy. And not only in their ordinarie worke they serue them in good stead, but also they help them to multiply: for the hotter that the place is, the more hope there is of a greater increase. Certes, this is found by experience, That the better the hiue is peopled with a number of bees, the Cast when time comes will bee the greater, and the oftner will they swarme. But after the hony is growing once to maturitie and perfection, then begin they to driue these drones out of dores: nay, ye shall haue many bees set vpon one poore drone, and kill him out-right. So that a man shall not lightly see any of that kind but in the Spring time.

If one pluck off the wings from a drone, and put him again within the hiue, he will neuer lin vntill he haue done the like by all the rest of the same kind. As touching the roiall pallaces for the kings and captaines that shall be, built they are all most stately, great of receit, in shew magnificent, seated by themselues apart, and like citadels raised vpon some high knap or tuft of a mountaine. If one of these castles chance to be pressed or crushed, there will no more come of that princely race. All the lodgings and roomes where the bees abode is, are six cornered, according to the number of feet emploied in that worke. None of all this is done at any set time or day appointed: but they take the opportunity when they can espie faire weather to fit their businesse, and so do these things by snatches. And surely within a day or two at the most, they fill their store-houses with honie.

Chap. XII.

¶ *The Nature of Hony.*

THis pleasant and sweet liquor which we call hony, is ingendered naturally in the aire, and especially by the influence and rising of some starres: but principally during the feruent heat of the canicular daies, euen when the Dog-star is in his ful power and force: neuer before the appearing of the star Virgiliæ, but alwaies before day. For so about the day breake betimes in the morning, the leaues of trees are found bedewed with honey,: and looke whosoeuer they are, that haue occasion to be abroad in the aire about the dawning of the morrow, they may euidently perceiue their cloths wet with a clammy humor of hony, yea, & their hairs glewed therewith together, if they go bare headed. Be it what it will, either a certaine sweat of the skie, or some vnctuous gelly proceeding from the stars, or rather a liquor purged from the aire when it purifieth it self; would God we had it so pure, so cleare, and so naturall, and in the own kind refined, as when it descendeth first, whether it be from skie, from star, or from the aire. For euen now such as it is, passing as it were through so many hands: namely, falling from a region so high and remote from vs, and in the way as it commeth catching much filth: and namely, infected with the grosse vapour of the earth which it meeteth in the fall: moreouer, sucked and drunke (as it is) by the Bees from the leaues of trees and grasse, and so gathered and laid vp in their little bellies or bladders (for at their mouth they spew and cast it vp again:) corrupted also and sophisticated with other humors drawn out of floures: finally, so long soking within the hiues, and suffering so many alterations: yet for all the sorrow, a great resemblance it carieth still with it of a most pleasant, sweet, and cœlestiall liquor.

Chap. XIII.

¶ *The best kinde of Honie.*

THe best hony is euer there, where the best floures are, within the receptacles whereof, it lieth. As we may see in the counrry about Athens, which carrieth the name for honey: also in Sicilie within those territories about Hymettus and Hybla: and lastly, in the Isle Calydna. Now this hony, whereof we treat, is at the first cleare and thin as water; and for certaine daies in the beginning, it workes and boiles like to new wine, and so purgeth it selfe. By the 20 day it getteth a certaine consistence and thicke substance, and soon after gathers a thin cream or skin ouer it: which in the very heat of working, is raised of a scum, and so thickneth. The best simply that bees can sucke, and least infected with the corruption of 3 branches, is that which they get out of the leaues of Oke, Tilia [*i.* Linden tree] and Canes.

Chap. XIIII.

¶ *The sundry sorts of hony, according to diuers regions.*

HOnie (as we said before) is better or worse, according to the region where it is gathered, and that in many respects. For in some place ye shall haue goodly combs: howbeit, more commendable for wax than the hony in them: as in the Pelignians country, and Sicily. In others, and namely in Candie, Cypres, and Africk, the combs yeeld more hony than wax. Some countries there be, especially in the North parts, where the combs passe for bignesse: insomuch as in Germany there hath bin a hony-combe seene eight foot long, and blacke all within. But in what region soeuer it be that hony is found, three kinds there be of it. First, the Spring hony made of floures only; like as the comb also: and thereupon the Greeks call it Anthinon, which is as much to say as the Floure-hony. Some would not haue this to be once touched, but to serue for nourishment of the young bees, that the swarmes or casts may be more strong and lustie. Others againe leaue for the bees of none lesse than of it: by reason of the great plenty like to follow, at the rising of those notable stars in the Summer ensuing. Moreouer, the combs are in their principall beauty about the Sun-stead in summer, when daies be longest, at what time as the Vine and Time do begin to floure. Also, in taking forth of the hony combs, needfull it is to be well aduised in ordering the matter for the prouision of food for bees. If they be cut short and destitute of their meat, they either despaire and die for want, or els depart and flie away. Contrariwise, if you leaue them too much, plenty breeds idlenesse, that they will not labour: neither deigne they to feed of Erithace, their ordinarie food, but fall to the good hony. They therefore that be well experienced in these matters, thinke it good to leaue them the twelfth part of this store and vintage, if I may so say, which is gathered in the combs. And verily, it seemeth that Nature hath ordained a certaine set day for to begin this vintage, if men would take knowledge thereof, and marke it well; namely, the 30 day, after the bees swarmed and went forth: and vsually it falleth out, that this gathering commeth within the moneth of May. A second kind of hony there is, which we call Summer hony, and is named also Horæum, of that principall season wherin it is made, namely, in the very midst of dog-daies, when the star Sirius is in his full strength: and that commonly is 30 daies after the Sun-stead. And I assure you, Nature hath shewed her admirable and excellent power to men ward in this behalfe: in case their fraud and deceit would suffer her works in their entire and proper nature without corruption and sophistication, which marreth all, and maketh nothing but confusion. For vpon the rising and apparition of any star, and especially of those that be more excellent than the rest, or after that a rainbow is seen aboue the earth, and no showers of rain presently follow, but a drizling dew warmed with the raies and beams of the Sun: ye shall haue that which falleth, not to be bare hony, but a very medicinable thing, euen a celestiall gift, singular good for eies and vlcers, yea, and comfortable to the principall noble parts within the body. And if this happen to be at the rising of the dog-star, and it chance withall, that vpon the same day (as oftentimes it falleth out) *Venus*, *Iupiter*, or *Mercury* bee Orientall, then shall yee haue so heauenly a sweet liquor, that no one thing in the World may bee comparable to it for the curing of all our maladies, and euen to reduce and recouer vs backe from death vnto life, like vnto that cœlestiall and

A and diuine Nectar, which immortalizeth the gods aboue.

Chap. XV.

¶ *The markes of good hony.*

MOre plenty of hony is gathered in the full of the Moone, than at any other time: and if therewith the weather be faire, the same wil be more vncteous and fattie. In all kinds, the best hony is that, which runneth of it selfe as new Wine and Oile; and called it is Acedon, as a man would say, gotten without care & trauell. All Summer hony is red, as being made in the driest season of the yere. The hony which commeth of Time, is held to be the best and most profitable, in colour like gold, in taste right pleasant; euident to be knowne by the little leaues therein: and the same is likewise fattie. That which is made of Rosemary, or within the aire and vapour of the sea, is thick: and such verily as is thus candied, and will not run like lithe hony, is nothing commendable. As for Time honey it will not thicken: and if a man touch it, rope it wil and draw small slimie threds after it: which is a principall signe of the weight and heauinesse thereof. If hony be short in the handling, and soon breake, and that the drops part one from the other, it is thought to be a token of the worst and coursest of all. Another triall there is besides of good hony, namely, if it be fragrant and odoriferous to smell vnto, sweet in taste, & biting withall, or quick at the tongues end, glutinous and cleare. As touching the driuing of hiues for summer hony, *Thasius Dionysius* is of opinion, that the tenth part therof should be left for the bees, namely, if they were full: if not, then according to the proportion: but if they were but light and very thin, he would not haue them to be touched at all. The Athenians goe by this rule, and do obserue duly the Capriticial day, which is kept wholly vnto *Vulcan*: for then they euer begin to driue their hiues for this kind of honie.

Chap. XVI.

¶ *Of a third kinde of Honie: and how a man should know good Bees.*

THere is a third sort of wild hony, which the Greeks cal Ericæum [*i.* Heath or Ling hony] and is of least reckoning. It is gathered after the first rain in Autumne, when the heath and lings only bloom in the woods, wherupon it seems as if it were sandy. This kind of hony is ingendred for the most part after the rising of Arcturus, much about the Ides of September. Some there be that continue in gathering Summer hony to the rising of Arcturus: betweene which and the Autumne Equinoctial are 14 daies; & from thence vnto the setting of Virgiliæ (namely, for the space of 48 daies) the said heath is most in his blooming time. This shrub the Athenians call Tetralix; the Eubœans name it Sisara: & they repute it to be a floure most pleasant to bees, haply, because at that time there is no plenty of other floures. This gathering of hony is about the end of vintage, & the occultation of the Vergiliæ: & commonly ends by the Ides of Nouember. In driuing of the hiues for this hony, by good reason, two [third] parts therof would be reserued for the bees: & especially those corners of the combs, which haue in them the prouision called Erithace. From the mids of winter to the rising of Arcturus, for 60 daies bees are nourished only with sleep, without any other food. But from that time vnto the spring equinoctial, and namely, where the weather is more warm, they are awake. Howbeit, they lie stil in their hiue, & then fal to their victuals which they had laid vp in store against that time: but in Italy they do the like indeed after the rising of the star Virgiliæ: howbeit, till then they do nothing but sleep. And there verily, men vse when they take the hony forth of the hiues, to weigh the combs, and so by weight dispense & set out how much they will leaue them for their food: hauing this opinion, that they are bound to deale in iustice & equity euen with the very bees: insomuch, as it is commonly said, if they be defrauded of their due in this society & part-taking, and find falsehood in fellowship, they wil die for griefe: & so both the old stock will be lost, and the hope also of a new increase. In the first place therfore, this is a rule, that such folk only be set about this businesse to driue the hiues, who are neat & clean. A theefe & a woman whiles she is in her monthly sicknes, they abhor. In the taking out of hony, the best means to driue away the bees, is to smoke them out of the hiue: lest that you anger them, or that they deuoure the honie themselues with more greedines. Moreouer, when they grow to be idle, perfuming & smoking

of them thus now and then, maketh them more fresh to go about their worke. For when they lie still and doe nothing, they make their combes looke dead and blackish. Again, if they be ouermuch smoked, they will be the worse for it; and surely, the very hony soon catcheth the hurt hereof, for so tender and weake will it be, that with the least dew that is, you shal haue it to turn and wax sore. And therefore in all kinds of hony they obserue and keepe that which is called Acapnon [a without smoke.] The hony gathered of both sorts of Thyme, called thereupon Bithymum, is not white: howbeit, very good it is for eies and to clense vlcers.

Now as touching the generation of Bees, and how they multiply and increase, much dispute there hath bin among the learned, and a nice question this is. For first and foremost, bees were neuer seen to ingender one with another: and therfore most men haue bin of opinion, that yong bees must needs be made of floures fitly and handsomely laid together and composed, according to Natures lore. Others say, that one master Bee which is the king in euery swarme, doth beget them all: and that he forsooth is the only male; bigger also than the rest and more strong, because he should not faint and faile in the action: for without such an one, we see there is no breed: and him all the other bees attend vpon, not as their leader and captain, but as the female follow the male. Certes this were a good coniectural opinion, and sounding to a truth, but that the breed of these Drone-bees aforesaid, doth checke and ouerthrow it cleare: for what reason is there that one and the same maner of procreation, should bring forth some perfect & others vnperfect? The former opinion yet might seeme more probable, but for another difficulty and inconuenience that crosseth it too; for otherwhiles in the vtmost edges and sides of the combs, there are seen to breed the bigger kind of bees, which chase and driue the others away: and this vermin is called Oestrus [a the gad-bee or horse flie.] Now if those little wormes or grubs from whence the bees come, were made of floures, which they themselues formed and brought into fashion, how commeth this gad-bee, and whereof is he made? This is certaine, that bees couvy and sit as hens do: and that which is (after a sort) by them hatched, seemeth at the first to be a little white grub or magot, lying crosse ouerthwart the hony, and so fast sticking thereto, as if it seemed to feed thereupon. The king that shall be, at the very first is yellow, and of the colour of hony: as if he were made of the most choice and excellent floure of all the rest: nothing like to a grub as the other, but presently hath wings. The rest of the multitude, when they begin to take some shape, are called Nymphæ: like as the Drones at the beginning, be termed Sirenes or Cephenes. If a man take their heads from either sort, before they be winged, it is a most pleasant and excellent meat for the old dams. In processe of time as they grow bigger, the old bees distill and drop meat into their mouths, as they sit vpon them: then they keep most humming (as some thinke) for to set combs into an heat, which is requisit and necessarie for the hatching of them: and thus they continue, till the little pellicles or membranes be broken: within which, euery one lieth by it selfe, as egs: and then they break forth all together and shew themselues accomplished bees. The manner and experiment hereof, was seene vpon a time in a ferme neere vnto Rome, belonging to a nobleman of Rome who somtime had bin Consul: for he caused his hiues to be made of lanterne horns that a man might see through into them. These yong worms be 45 daies before they come to their perfection.

There is found in some combs, a certain bitter thing and hard like to wax, which the Latines call *Clerus*. This is as it were the abortiue and vntimely fruit of the bees, to wit, when either by maladie or idlenesse, or rather vpon some barrennesse and vnfruitfull disposition by nature, bees are not able to bring the same to perfection.

As for the yong bees, they are not so soon abroad, but they begin to labor with their mothers, and are trained by them to learn how to gather hony. This youg people haue a yong king also: vnto whom they make court, and whom they follow. And many such kings are bred at first, for feare lest they should want: but when the bees are grown big, they all agree with one accord and voice, to kill those that be most vntoward among them, for feare they should make diuisions, factions, and siding to parts. These kings be of two sorts: those that are red all ouer, be better than the black or partie-coloured. All the race of them be very faire and goodly to see to: and twice as big as the rest: their wings shorter, their legs streight: in their port and manner of march, more stately: carrying in their front a white star, like a diadem or coronet: far brighter also and more neat they be than the common sort.

CHAP.

CHAP. XVII.

¶ *The regiment of Bees, and their gouernment.*

WHat shall a man now dispute about *Hercules*, whether there was but one of that name or many? Likewise as touching the Sepulchre of Prince *Bacchus*, where and which it is? As also trouble his head in many other such like antiquities, buried by long continuance of time. For behold, in one small matter that is daily seene in our countrey houses, in a thing annexed to our fermes, and whereof there is such store, all Authors who haue written of Agriculture are not yet resolued: namely, Whether the king of Bees alone hath no sting, and is armed only with majestie? or whether Nature hath bestowed a sting vpon him, and denied him only the vse thereof? For certaine it is, that this great commander ouer the rest, doth nothing with his sting: & yet a wonder it is to see, how they all are readie to obey him. When hee marches abroad, the whole armie goes forth likewise: then they assemble together, and enuiron him round about; they are of his guard, & so close they keep vnited together, that they wil not suffer him once to be seen. At other times, when all his people are busie in labor, himselfe (as a right good captaine) ouerseeth their workes, goes about from one to another, encouraging them in wel doing, and exhorting them to plie their businesse: himselfe only exempt from all other trauell & paines taking. About his person he hath a certaine guard euer attendant: he hath his Lictors & officers alwaies in readinesse, in token of majestie and princely port. He neuer sets forward, but when the whole swarme is prest likewise to goe forth: and in truth, long time before a man may perceiue that they be about a voiage and expedition; for, many daies together there is an extraordinarie humming and noise within, whiles they prepare to dislodge, trussing vp as it were their bag and baggage, and expecting only a faire day of remoue. And suppose that the king haue in some battaile lost one of his wings, yet will not his hoast forsake him and flie. When they be in march, each one desires and striues to be next the prince, as taking a joy and pride to be seene of him, how lustily they performe their deuoir. If he begin to be wearie, they support him with their shoulders: if he be tired indeed and faint outright, they cary him full and whole. If any one of their owne companie chance to faile for very wearinesse, and doe drag behind, or stray aside and wander out of the way, it will yet endeauour to follow the armie only by the smelland sent. Where the king once settles and takes vp his resting place, there they all pitch downe their tents and encampe. And I assure you, herein lieth a matter of great weight and importance; as touching the Auguries and presages gathered by the manner of their setling, prognosticating both to publicke states and also to priuat persons, somthing to ensue of much moment, either for good or otherwise; according as they haue been obserued to hang together in clusters like bunches of grapes, either at mens houses, or on the temples of the gods. By occasion whereof, folke had recourse to their deuotions and sacrifice, for to appease the heauenly powers: and yet oftentimes such foretokens haue not beene expiat without some strange euents in the end. There was a swarme of Bees rested vpon the very lips and mouth of *Plato*, when he was but a very babe & infant; foreshewing (no doubt) that singular eloquence of his, and sweet vtterance that afterwards he had. Another cast of Bees setled within the very camp of General *Drusus*, the very same day, when he obtained that notable victorie at Arbalo. By which examples we may see, that this coniecturall skill and learning of these Soothsayers holds not alwaies, nor prooues euer true: for they forsooth suppose this to be euermore a portentous signe of some fearfull euent and misfortune. To returne again to our captaine Bee: if he chance to be entrapped and surprized by the enimie, the whole armie is sure withall to bee taken with him. If he be defeited & slain, the field is lost: all the rest be scattered, and seek their fortune to serue some other prince: for without one king or other, liue they cannot. Sometime they are driuen to kill those of the kings race, and namely when there be many kings together: but this they doe perforce and fall against their wills: and before they will so do, they chuse rather to ruinate and pul down the houses wherein they were bred; especially when there is some feare of scarsitie, by reason of the vnkind season: and at such a time also, they chase and driue away the drone bees. And yet I see some doubt made of them: for diuers be of opinion, that they be a kind of Bees by themselues, and that the rest do set against them as very theeues. The biggest they are of all others, but blacke and broad bellied: good reason therefore that they should

be

be called Theeues, beeause they come stealing and eat vp their honey. Certaine it is, that these G
drones be killed by the other Bees: and surely, king of their owne they haue none. But how they
should be naturally without a sting, there is some question, & the same as yet not determined.
This is well known, that in a moist and rainie spring, Bees multiply better: but if it be drie wea-
ther, there will be more increase of hony. Now if it happen, that the meat in one hiue be spent,
the Bees belonging thereto will assaile their next neighbors, with intent to rob & spoile them
of their prouision. But they on the contrarie side, put themselues in battel aray, with full intent
to take them againe. And if there chance to be a keeper by, to see the combat, that part which
perceiues him to fauor their side, wil not once make at him for to sting him. Other causes there
are besides, which make them often to go together by the ears, & then shall ye haue 2 seuerall
captaines to arainge their battalions one against another. But most of all they brawle and jar H
vpon occasion of gathering and carrying floures, whiles they call each one to his owne compa-
nie, for to come forth and take part. But all this great fray is soon parted and dispatched, either
by casting vp some dust among them, or by making a little smoak & perfume vnder them. And
reconciled soone they be againe, with setting before them a messe of milke, or honied-water.

Chap. XVIII.

¶ Of the sundrie sorts of Bees in generall: and what things be contrarie and hurtfull vnto them.

THere is a kind of rusticall and wild Bee: and such are more rough and hideous to see to: I
much angrier also and curst than the rest: howbeit, more laborious and painfull by farre.
Of domestical and tame house-Bees, there are two sorts. The best be those that are short,
well trust vp and round, and withall, painted with sundrie colours. The long ones be the worse,
and such as resemble waspes: and yet the worst of all others, be those that are hairie all ouer.
Within the kingdome of Pontus there be white Bees, and those make honey twice in euerie
moneth. Moreouer, along the riuer Thermodoon, there be two sorts more. The one, gathers ho-
ney in trees: others, within the ground, and bring great encrease thereof: for they frame their
combes with a threefold course and ranke. The sting that Nature hath giuen vnto Bees sticketh
within their bellies. Some are of opinion, that with the first pricke they giue with it, they die K
presently. Others hold, that they die not withall, vnlesse they thrust it forth so far, that some of
the gut follows after: mary howsoeuer it be, they become afterwards no better than drones: nei-
ther gather they any more honey, as if they were guelded of their vigor and strength; so as they
cease to doe good and harme both at once. We find it written in Chronicles, that horses haue
been stung to death by them. Filthie stinking sauors they cannot abide, and namely, such as be
contagious; and from them will they flie farre enough. Nay more than that, sure they will be to
haunt & sting them that smell as they go of sweet pomanders and odoriferous ointments, not-
withstanding they be otherwise themselues subject to the injuries of most liuing creatures.
For first and foremost, they are molested and assailed by those of their owne nature, but yet de-
generate and of bastard breed, to wit, Waspes and Hornets: also by a kind of Gnats called Mu- L
scones, Swallowes, Martins, and some other birds, make foule worke among them, and are their
mortall enemies. The Frogs lie in wait for them as they come to drink: which is the principall
worke they haue to doe, when they be about to multiply and breed yong. And not those Frogs
only which keep in standing pooles and running riuers, but those land-Frogs of a Todes kind
will come of their owne accord from out of the brambles and briers where they keep, and leap
vp to the very dore and entrance of the hiue; were they wil blow and breath in vnto them: and
when the Bees come flying forth thither, to see what the matter is, soone are they snapt vp and
deuoured. And as for Frogs, all the sort of them are supposed not to feele the pricke of their
sting. Sheep also are no friends of theirs: for if they be once intangled within their wool, hardly
can they get out again. Seeth but Crab-fish neer to their hiues, the very aire & smel therof will M
kill them. Ouer and besides, Bees naturally are many times sick; and that do they shew most e-
uidently: a man shall see it in them by their heauie looks, & by their faintnesse in their busines:
ye shall mark how some will bring forth others that be sicke and diseased, into the warme sun,
and be readie to minister vnto them & giue them meat. Nay, ye shall haue them to carie forth
their dead, and to accompanie the corps full decently, as in a solemne funerall. If it chance that the

A the king be dead of some pestilent malady, the commons & subiects mourn, they take thought
and grieue with heauy cheere and sad countenance: idle they be, and take no ioy to doe any
thing: they gather in no prouision, they march not forth; onely with a certaine dolefull hum-
ming they gather round about his corps, and will not away. Then requisite it is and necessarie
to seuer & part the multitude, and so to take away the body from them, otherwise they would
keep a looking at the breathlesse carcasse, and neuer go from it, but stil moan and mourn with-
out end. And euen then also they had need be cherished and comforted with good victuals,
otherwise they would pine away & die with hunger. To conclude, a man may soon know when
Bees be well in health, by their cheerfulnesse and fresh hue that they carry.

B

Chap. XIX.

Diseases of Bees.

THere be diseases also and imperfections in their worke: and namely when they fill not
their combs, or bring not to perfection their yong Bees. The first is called Cleros, like
as the other Blapsigonia. Moreouer, the sound made by reuerberation of the aire, which
men call Eccho, is hurtfull vnto them, for they feare mightily that resounding noise comming
with a double stroke. Mists & fogs also trouble them much: as for spiders, they be their grea-
test enemies of all others, in case they can preuaile so much as to enter into the hiue & weaue
a copweb within it: for they kil all the Bees, and there is no remedie against it. Againe, that
Moth or Butterfly which vseth to fly about the snuffe of a candle burning, (a poore silly flie o-
C therwise, and of base account) here doth much hurt, and that in diuers sorts; for not only it self
eateth and gnaweth the wax of their combes, but also doth blow and leaue behind them such
excrements as afterwards proue other moths. Also, whersoeuer he goes and flies within the
hiue, he leaues behind him a certaine substance, comming most from the dusty downe of his
wings, with which he thickneth the threds as it were of copwebs. There breed likewise euen in
very wood certain worms, which aboue all things make means to eat the combs. What should
I speake of their owne greedy feeding and glutting themselues with too much liquour of the
floures, in the Spring time especially? whereupon ensueth a dangerous flux and loosnesse of
their belly. As for oile, it is not bane to Bees only, but also to all other Insects: especially if a
D man dip their heads in it, and then let them be in the Sun, for presently they wil die of it. Ma-
ny times Bees are causers of their own death, with getting a surfet by excessiue deuouring of
hony, namely when they see it ready to be taken out of the hiue: for otherwise they are very
thrifty ouer-great sparers, and such, as at other times will driue out those that wast prodigally,
and be gluttinous, no lesse than such as be idle lusks, and slow at work. Nay, euen their own ho-
ny doth them hurt; for if they be anointed therewith in their hinder parts, they will die vpon
it. Lo how many enemies this creature, so liberall and bountifull, hath! see how many casual-
ties it is subiect vnto! and yet what be these I haue already rehearsed, in proportion and com-
parison of those which are omitted. Their remedies will we speak of in conuenient time and
place: for this present content I will my selfe to treat only of their natures.

E

Chap. XX.

¶ How to keepe Bees to the hiue: and the manner of repairing them.

BEes ioy in the clapping of hands, and ringing of brasen basons: at the sound thereof they
will assemble and come together: wherby it is plain, that they haue the fence of hearing.
When they haue done their taske of worke; when they haue brought forth their young
ones, and fully accomplished all their deuoir, then they perform a solemnitie of exercise: wher-
in after they haue flown abroad in the open aire at libertie, fetched their compasse about on
high, gathered into rings and rounds in manner of tournament for their pleasure: then at last
F when it is time of repast they return home again. The longest time that they can liue (say that
they passe through all dangers, and no misfortune light vpon them, but euery thing that is ad-
uerse fall out well and happily) is not aboue seuen yeares. And neuer was it knowne or heard
of, that an hiue continued aboue ten yeares. Some Writers be of opinion, That dead Bees if
they be kept within a house all a Winter, and when the Spring is come be laid forth in the hot

Sunne

Sun to fry, and one whole day be kept couered all ouer with fig tree aſhes, they will reuiue and be quick again. But ſuppoſe they be not only dead, but their bodies alſo loſt and gon, ſome ſay they may be repaired, and a new ſwarm ingendred, by laying the freſh panches of oxen or kine newly killed, with the dung, garbage and all, within a dunghill there to putrifie. *Virgil* affirms, that the carcaſſes of any yong beers will do the ſame: like as dead horſes will bred waſpes and hornets: and Aſſes carrion turne to be Beetle flies, by a certain metamorphoſis which Nature maketh, from one creature to another. And yet there be none of all theſe but are ſeen to engender: howbeit the manner of their breed is much after the nature of Bees.

Chap. XXI.

¶ *Of Waſps and Hornets.*

WAſps vſe to build them neſts on high of earth and clay, and therein make their roomes and cels of wax. Hornets, in caues and holes vnder the ground. All theſe verily haue their chambers made with ſix corners, and yet their neſts conſiſt of ſome barke and ſubſtance like cobwebs. And as they be a barbarous and ſauage kind of creatures, ſo their yong is not vniforme: one is ready to fly abroad, while another is but yong & not fledge, and a third a meere worme and grub ſtill. All theſe breed in Autumne, and neuer in the ſpring. When the Moone is in the full they increaſe maruellouſly. As for the little waſpes, called Ichneumones (and leſſe they be than others) they vſe to kill one kind of ſpiders, called Phalangia, and carry them into their neſts: they beſmeare them all ouer with a liniment, ſit ouer them, and ſo procreate their own kind. Moreouer, all the ſort of theſe liue vpon fleſh, contrary to the manner of Bees, which will not touch a dead carcaſſe. But waſpes hunt after the greater flies, and when they haue whipt off their heads, carry away the reſt of their bodies for their prouiſion. The wild Hornets vſe to keep in hollow trees: all winter time, like other Inſects, they lie hid, and liue not aboue two yeres. If a man be ſtung with them, hardly he eſcapes without an ague: and ſome haue written, that 27 pricks of theirs will kill a man. The other Hornets which ſeeme to be the gentler be of two ſorts: the leſſe of body do worke and trauell for their liuing, and they die when winter is come; but the greater ſort of them continue two yeares: and thoſe alſo are nothing dangerous, but mild and tractable. Theſe make their neſts in the ſpring, and the ſame for the moſt part hauing foure dores or entries vnto them, wherein the leſſer labouring hornets aboueſaid are ingendred. When thoſe are quick, brought to perfection, & gotten abroad, they build longer neſts; in which they bring forth thoſe that ſhall be mothers and breeders; by which time thoſe yong hornets that worke be ready to do their buſineſſe and feed theſe other. Now theſe mothers appeare broader than the reſt, and doubtfull it is, whether they haue any ſting or no, becauſe they are neuer ſeen to thruſt them forth. Theſe likewiſe haue their drones among them as wel as Bees. Some think, that toward winter theſe all do loſe their ſtings. Neither Hornets nor Waſpes haue kings or ſwarmes, after the maner of Bees, but yet they repaire their kind, and maintaine their race by a new breed and generation.

Chap. XXII.

¶ *Of Silk-wormes: the Bombylius, and Necydalus. And who firſt inuented ſilke cloath.*

A Fourth kind of flie there is breeding in Aſſyria, & greater than thoſe aboue named, called Bombyx [*i.* the Silke-worme.] They build their neſts of earth or clay, cloſe ſticking to ſome ſtone or rock, in manner of ſalt; and withall ſo hard, that ſcarcely a man may enter them with the point of a ſpear. In which they make alſo wax, but in more plenty than bees: and after that, bring forth a greater worme than all the reſt before rehearſed. Theſe flies ingender alſo after another ſort; namely, of a greater worme or grub, putting forth two hornes after that kind: and theſe be certain canker-wormes. Then theſe grow afterwards to be Bombylij; and ſo forward to Necydali: of which in ſix moneths after come the ſilke-wormes Bombyces. Silk-worms ſpin & weaue webs like to thoſe of the ſpiders, and all to pleaſe our dainty dames, who thereof make their fine ſilks and veluets, forme their coſtly garments and ſuperfluous apparell, which are called Bombycina. The firſt that deuiſed to vnweaue theſe webs of the ſilke-worme,

A worme, and to weaue the ſame againe, was a woman in Coos named *Pamphila*, daughter of *Latous*: and ſurely ſhe is not to be defrauded of her due honor and praiſe, for the inuention of that fine ſilke, Tiffanie, Sarcenet, and Cypres, which in ſtead of apparell to couer and hide, ſhew women naked thorough them.

Chap. XXIII.

¶ *Of the Silkeworme in Cos.*

IT is commonly ſaid, that in the Iſle Cos there be certaine Silkwormes engendred of floures, which by the meanes of rain-ſhowers, are beaten downe and fall from the Cypres tree, Terebinth, Oke, and Aſh: and they ſoone after doe quicken and take life by the vapor ariſing out of the earth. And men ſay, that in the beginning, they are like vnto little Butterflies naked; but after a while (being impatient of the cold) are ouergrowne with haire; and againſt the winter, arme themſelues with good thick-clothes: for being rough-footed, as they are, they gather all the cotton and downe of the leaues which they can come by, for to make their fleece. After this they ſal to beat, to felt & thicken it cloſe with their feet, then to card it with their nailes: which done, they draw it out at length, and hang it betweene branches of trees, and ſo kembe it in the end to make it thin and ſubtill. When al is brought to this paſſe, they enwrap & enfold themſelues (as it were) in a round bal and clew of thread, and ſo neſtle within it. Then are they taken vp by men, put in earthen pots, kept there warme, and nouriſhed with bran, vntill ſuch time as they haue wings acording to their kind: and being thus well clad and appointed, they be let go to do other buſineſſe. Now as touching the wooll or fleece which they haue begun, men ſuffer it to relent in ſome moiſture, and ſo anon it is ſpun into a ſmall thread, with a ſpindle made of ſome light Kex or Reed. This is the making of that fine Say, wherof ſilk cloth is made; which men alſo are not abaſhed to put on and vſe, becauſe in ſummer they would go light and thin. And ſo far do men draw back now a daies from carying a good corſlet & armor on their backs, that they think their ordinarie apparell doth ouer-lode them. Howbeit, hitherto haue they not medled with the Aſſyrian Silkworme, but left it for the fine wiues and dames of the city.

Chap. XXIV.

¶ *Of Spiders, and their generation.*

IT were not amiſſe to joine hereunto a diſcourſe of Spiders, for their admirable nature, which deſerues a ſpeciall conſideration. Wherin, this is firſt to be noted, that of them there be many kinds, and thoſe ſo well known vnto euery man, that needles is to be particularize & ſtand much vpon this point. As for thoſe which be called Phalangia, their ſtinging and biting is venomous, their bodie ſmall, of diuers colors, and ſharpe pointed forward; and as they go, they ſeeme to hop and skip. A ſecond ſort be black, and their feet are exceeding long. All of them haue in their legs, three joints, The leaſt of this kind, called Lupi, ſpin not at all nor make any webs. The greater, ſtretch forth their webs before the ſmall entries into their holes within the ground. But the third kind of Spiders, be they which are ſo wonderfull for their fine ſpinning and skilful workmanſhip: theſe weaue the great and large cobwebs that we ſee; & yet their very womb yeeldes all the matter and ſtuffe wherof they be made. Whether it be, that at ſome certain ſeaſon naturally their belly is ſo corrupt (as *Democritus* ſaith:) or that within it there is a certain bed (as it were) which engenders the ſubſtance of ſilke. But ſurely what ſoeuer it is, ſo ſure and ſteadie nailes the Spider hath, ſo fine, ſo round, and euen a thread ſhe ſpinnes, hanging thereunto her ſelfe, and vſing the weight of her owne bodie in ſtead of a wherue; that a wonder it is to ſee the manner thereof. She begins to weaue at the very mids of the web, and when ſhe hath laid the warpe, brings ouer the wooſe in compaſſe round. The maſhes and marks ſhe diſpenſes equally by euen ſpaces; yet ſo, as euery courſe growes wider than other: and albeit they do increaſe ſtill from narrow to be broader, yet are they held and tied faſt by knots that cannot be vndone. Mark, I pray you, how artificially ſhe hides the ſnares in that net of hers, made into ſquares, to catch the poore flies. A man would not thinke (who ſees the long yarne in her web wrought ſerce-wiſe, ſmoothed and poliſhed ſo cunningly, and the verie manner of the wooſe ſo glewiſh and clammie as it is, of it ſelfe) that all were to any purpoſe, and ſerued for that which ſhe

ſhe intends. See withall, how ſlacke and hollow the net is made to abide the wind, for feare of breaking: and thereby ſo much the better alſo to fold and enwrap what ſoeuer coms within her reach! What a craft is this of hers to leaue the vpper part thereof in the front vndone, as if ſhe were wearie (for ſo a man may gueſſe, when he can hardly ſee the reaſon) and (as it is in hunters net and toile) that ſo ſoone as thoſe nets be ſtumbled vpon, they ſhould caſt the flies headlong into the lap and concauitie of the net? To come now vnto her neſt and hole: Is there any Architecture comparable to the vault and arched frame? And for to keep out the cold, how is it wrought with a longer and deeper nap than the reſt! What ſubtiltie is this of hers, to retire into a corner ſo far from the mids, making ſemblance as though ſhe meant nothing leſſe than that ſhe doth, and as if ſhe went about ſome other buſineſſe! Nay, how cloſe lies ſhe, that it is impoſſible for one to ſee, whether any bodie be within or no! What ſhould I ſpeak of the ſtrength that this web hath to reſiſt the puffes and blaſts of winds; of the roughneſſe to hold and not breake, notwithſtanding a deale of duſt doth weigh and beare it downe? Many a time ye ſhall ſee a broad web reaching from one tree to another: and this is when ſhe learns to weaue & begins to practiſe and trie her skill. Shee ſtretches a thread, and warps in length from the top of the tree downe to the very ground; and vp again ſhe whirles moſt nimbly by the ſame thread: ſo as at one time, ſhe ſpins and winds vp her yarne. Now if it chance that any thing light into her net, how watchfull, how quick ſighted, how readie is ſhe to run? Be it neuer ſo little ſnared euen in the very skirt and vtmoſt edge therof, ſhe alwaies skuds into the mids; for ſo by ſhaking the whole net, ſhe intangles the flie or whatſoeuer it be, ſo much the more. Looke what is ſlit or rent therein, ſhe preſently doth mend and repaire, and that ſo euen and ſmall, that a man cannot ſee where the hole was derned and drawne vp again. Theſe Spiders hunt alſo after the yong Lizards: firſt they enfold and wrap the head within their web: then, they catch hold and tweake both their lips together, and ſo bite and pinch them. A worthy ſight and ſpectacle to behold, fit for a king, euen from the ſtately Amphitheatres, when ſuch a combat chances.

Moreouer, there be many preſages and prognoſtications depend vpon theſe Spiders: for againſt any inundations and ouerflowings of riuers, they weaue and make their cobwebs higher than they were wont. In faire and cleare weather, they neither ſpin nor weaue, vpon thicke and cloudie daies, they be hard at worke: and therefore many cobwebs be a ſigne of raine. Some thinke, it is the female that ſpins and weaues; and the male, which hunts and gets in the prouiſion for the familie: thus ordering the matter equally in earning their liuing, as man and wife together in one houſe. Spiders engender together with their buttocks; & little worms they do lay like egs. For, conſidering that the generation of all Inſects beſides, in a manner can be declared and ſhewed no otherwiſe, I muſt not deferre the relation therof, it being ſo admirable as it is. Well then, theſe egs they lay in their webs, but ſcattering here and there, becauſe they vſe to skip and leap when they thruſt them forth. The Phalangius only ſits vpon the eggs within the very hole, and thoſe in great number: which begin not ſo ſoon to peep, but they eat the mother, yea and oftentimes the father likewiſe, for he helps her alſo to cooue. And theſe kind of Spiders bring commonly 300 at a time: whereas all the reſt haue fewer. They ſit ordinarily thirtie daies. As for yong Spiders, they come to their full growth and perfection in foure weekes.

Chap. XXV.

¶ *Of Scorpions.*

SEmblably, the land Scorpions do lay certaine little worms or grubs in maner of eggs: and when they haue ſo done, periſh likewiſe for their labour, as the Spiders. Their ſtings be as venomous and dangerous, as thoſe of ſerpents: and albeit there enſue not thereupon ſo preſent death, yet they put folke to more paine a great deale; inſomuch as they languiſh and lie drawing on three daies before they die. If a maiden be ſtung with one of them, ſhe is ſure to die of it: other women alſo for the moſt part catch their death thereby, and hardly eſcape. Yea and men alſo find their poiſon to be mortall & deadly, if they be ſtung in a morning by them when they creep newly out of their holes, faſting, & before they haue diſcharged their poiſon by pricking one thing or other firſt. Their ſting lies in their tails, and readie they are with it alwaies to ſtrike. There is not a minute of an houre but they practiſe and trie how they can thruſt it forth, (ſo malicious they be) becauſe they would not loſe and miſſe the firſt opportunity preſented vnto

vnto them. They ſtrike both ſidelong or byas, and alſo crooked and bending vpward, with their taile. The poiſon that comes from them, is white, as *Apollodorus* ſaith, who alſo hath ſet downe 9 ſorts of them, and diſtinguiſhed them by their colours, which me thinks, was but ſuperfluous, and more than needed; conſidering that a man cannot know by his diſcourſe, which of them he would haue to be leaſt hurtfull and noiſome. He affirmeth, that ſome haue double ſtings, and that the males are more curſt and cruell than the females: for he auouches, that they do engender together, and that the males may be knowne by this, That they are long and ſlender. Moreouer, that they be al of them venomous about mid-day, when they be enchafed and ſet into an heat, by the ſcalding and ſcorching ſun: alſo when they be drie and thirſtie, they cannot drinke their full and quench their drought. This is well known, that thoſe which haue ſeuen joints in their tailes, be more fell than the reſt: for it is ordinarie in them to haue but ſix. In Affrick, this peſtilent creature vſes to flie alſo, namely, when the Southerne winds blow, which carrie them aloft in the aire and beare them vp as they ſtretch forth their armes like oares. The ſame *Apollodorus* before-named auouches plainely, that ſome of them haue very wings indeed. The people called Pſylli (who making a gainfull trade and merchandiſe of it, to bring in hither vnto vs the poiſons of other countries, and by that meanes haue filled Italie with forrein venomous beaſts) haue many times aſſaied to bring them hither; but neuer would they abide ſo much as the aire of Sicilie, nor liue in that tract. Howbeit we ſee of them now and then in Italie, but harmleſſe they be all: like as in many other places beſides, and namely about Pharus in Ægypt.

In * Scythia they be ſo dangerous, that they kill their hogs; which otherwiſe be creatures that can eat ſuch poiſons, and yet liue and do full well. And if it be true that is ſaid, the black ſwine die more ſpeedily, eſpecially if after they be ſtung, they goe into the water and drench themſelues. If a man be ſtung with a Scorpion and drinke the powder of them in wine, it is thought to be preſent remedie. Men hold, that nothing is more contrarie vnto them than oile, if they be dipped therein: as alſo to the Stelliones, which are made like Lizards, and do no hurt to them only, becauſe they are without blood. Like as the Scorpions alſo are ſaid to be harmleſſe to any thing that is bloodleſſe. Some are of opinion, that they likewiſe deuoure their young, ſaue only one who is more ſlie and craftie than the reſt, who gets vpon the rumpe behind of the mother, and there ſits, being aſſured that hee is ſafe enough in that place, both from ſting of taile and tooth in mouth. This Scorpion reuenges the death of his other brethren and ſiſters: for in the end he skips vpon the backe of father and mother both, where he gnaweth and eateth them to death. To conclude, Scorpions vſually do breed eleuen young ones at a time.

* Or rather Caria.

Chap. XXVI.

¶ *Of Stellions and Graſſhoppers.*

THe Stellions after a ſort be of the nature of Chamæleons, liuing only vpon dew and Spiders. Graſſhoppers liue alſo much after the ſame manner. And they be of two ſorts, namely, the leſſer, which come firſt, and die laſt: but thoſe be mute. The latter breed, ſeldome or neuer flie: and thoſe likewiſe are of two kindes. Sheh as ſing aloud be named Echetæ; and the leſſer ſort of them Tettigoniæ: but thoſe other are more ſhril, and chant full merrily. The male Graſſhoppers in both kinds, do ſing: the females are ſilent. The people of the Eaſt countries make their food of them: euen the very Parthians, who otherwiſe abound in wealth. The hee Graſſhoppers are the ſweeter meat before the time of engendring: and the ſhee Graſſhoppers afterward, by reaſon of egs knotted within them, and thoſe be white. They engender with their bellies vpward. They haue a certain roughneſſe vpon their backs, which is very ſharp, and therwith they worke a hollow gutter in the ground, as a neſt to lay their egs and breed in. At the firſt, appeareth a little wormé or maggot; whereof coms afterward that which they call Tettigometra, as one would ſay, the mother of Graſſhoppers, or the great Graſſhopper. For about the Sunſtead in Summer, the vtmoſt cruſt or caſe thereof breaketh, and then out they flie, and alwaies in the night. At the firſt, blacke they be and hard withall. Of all creatures that are known to liue, the Graſſhoppers alone haue no mouth inſtead wherof, they haue a certaine ſharp pointed thing in their breaſt (like vnto their tongues that carrie ſtings in their mouthes) and with it they ſucke and licke in the dew. Their breaſt is full of little pipes, from whence commeth that ringing noiſe of the Echetæ which we do heare, as I haue aboue ſaid. Moreouer, their bellie is

emptie and hath nothing in it. When a man raiſeth them, ſo as they be thereby forced to flie, they yeeld forth a certaine humor: which is the onely argument that they be nouriſhed of the dew. They haue moreouer this one marke from all other liuing creatures, namely, no concauitie of their bodie to be ſeene wherby to void out any excrements. So dimme. ſighted they be, that if a man chance to come neare vnto them, plucking in and ſtretching out his finger before them, they will preſently leape vpon it, ſuppoſing that it is ſome leafe that waggeth. Writers there be, that make two more kinds of them, namely, the greater, which appeare at the firſt ſpring and budding of trees; wherupon it is called Surcularia: and a leſſer, which ſome name Frumentaria, others Auenaria. For this ſheweth it ſelfe when the corne is ripe and begins to die in the ſtraw.

Chap. XXVII.

¶ *Places wherein there be no Graſhoppers: alſo where they are mute.*

IN countries bare and naked of trees and wood, there breed no Graſhoppers: and therefore ye ſhall haue them at Cyrene, about the towne, but not in the plaines and fields therof. Neither ſhall a man meet with them in woods that be cold and full of ſhade. It ſeemes alſo, that they take a liking to ſome one quarter more than another: for in the region of the Mileſians, few places there be that haue them: but in Cephalenia, there is a riuer that doth limit and bound them: for of the one ſide there be plentie of them, and on the other, few or none. In the territorie of Rhegium they be all mute. Paſſe the riuer once and come into the Locrians countrey ye ſhall heare them chaunt luſtily. Wings they haue like to thoſe of Bees, but larger, to the proportion of their bodies.

Chap. XXVIII.

¶ *The wings of Inſects, and ſundrie kinds of Beetles.*

OF Inſects, ſome carie two wings about them, as the flies: others foure, as Bees. As for Graſhoppers, they flie with wings made like pellicles or fine skins. In ſumme, all Inſects which be armed with a ſting in their bodie or taile, haue foure apeece: and none againe haue aboue twaine that carrie their offenſiue weapon in their mouth. To the former, Nature hath giuen it for to reuenge; to the other, only to feed themſelues, and content their appetite. Moreouer, plucke from any of them their wings, there will neuer come new in the place. None that haue a ſting in their taile, be double winged. Some Inſects there be, which haue growing a certaine huſk or cod ouer their wings, for the ſafegard and defence thereof, as the Beetles: and the wings of ſuch be thinner and more brittle than others. Sting they haue none, but a certaine kind of the great ones be armed with two long hornes boking out before them, and two forked they be and toothed like Pinſons, in the top, which (when they liſt) they can bring together and make them meet, and ſo nip and bite withall. Theſe Beetles, folke vſe to hang about the necke of young babes, as preſent remedies againſt many maladies. Such Beetles, *Nigidius* calleth Lucanes. Ouer and beſides, there is another ſort, which tumbling vpon their back in dung, do roll it into great round balls with their feet; & therin do make neſts for to beſtow their little grubs (which are their young) againſt the cold of winter. Some there be that vſe to flie vp and down, and where euer they go, make a great buzzing noiſe as if they lowed. Ye ſhal haue others again that keepe in medowes; yea and Crickets that haunt the earth and ſtocke of chimnies, where they make many holes, and lie cricking aloud in the night.

The Glo-wormes, are named by the Greeks Lampyrides, becauſe they ſhine in the night like a ſparke of fire: and it is no more but the brightnes of their ſides and taile: for one while as they hold open their wings, they glitter; another while when they keep them cloſe together, they be ſhadowed and make no ſhew. Theſe Glowbards neuer appeare before hay is ripe vpon the ground, ne yet after it is cut downe. Contrariwiſe, the flies called Blattæ, liue and be nouriſhed in darkneſſe: light is an enemie vnto them, and from it they flie. They breed commonly in baines and ſtouues, of the moiſt vapors that be there. Of the ſame kind there be other great Beetles red in color, which work themſelues holes in the drie earth, where they frame certaine receptacles like vnto Bees combs, little and ſmall, ful of pipes reſembling hollow ſpunges; and all

all for a kind of baſtard honey, whereof yet there is ſome vſe in Phyſicke. In Thracea neare to Olynthus, there is a little territorie or plot of ground; where this one creature (among all other) cannot liue; whereupon the place is called Cantharolethus. The wings generally of all Inſects, be whole, without any ſlit: and none of them hath a taile but the Scorpion. Hee alone hath not only armes but alſo a ſting in the taile. As for the reſt, ſome of them haue a ſharp pricked weapon in their muzzle, as namely, ithe Breeſe or great Horſe-flie, called in Latine *Aſilus* or *Tabanus*, whether you will. Likewiſe Gnats alſo, and ſome kind of flies. And theſe prickes ſerue them in good ſtead both for mouth and tongue. Some of theſe are but blunt, & not good for to pricke, but only hand ſome to ſucke withall, as flies, which haue all of them a tongue, beeing euidently fiſtulous and like a pipe. And none of all theſe haue any teeth. There bee Inſects with little hornes proaking out before their eyes, but weake and tender they bee, and good for nothing; as the Butterflies. And there be againe, that are not winged, and ſuch be the Scolopendres. All Inſects that haue legges and feet, goe not directly, but bias and crooked. Of which, ſome haue the hinder legges longer than the former, and ſuch bend hooked outward; as the Locuſts.

Chap. XXIX.

¶ *Of Locuſts.*

THe Locuſts lay egges in Autumne, by thruſting downe into the ground the fiſtule or end of their chine, and thoſe come forth in great abundance. Theſe eggs lie all winter long in the earth; and at the end of the ſpring the yere following, they put out little Locuſts, black of colour, without legs, and creeping vpon their wings. Hereupon it commeth, that if it be a wet ſpring and rainie, thoſe egs periſh and come to no good: but in a drie ſeaſon, there will be greater increaſe and ſtore of Locuſts the Summer enſuing. Some writers hold opinion, that they lay and breed twice a yeare: likewiſe that they periſh and die as often. For they ſay, that when the ſtar Vergiliæ doth ariſe, they breed: and thoſe afterwards about the beginning of the Dogdaies, die: and others come in their place. Others ſay, that they engender and breed againe their ſecond litter, at the full or ſetting of Arcturus. True it is indeed, that the mothers die ſo ſoone as they haue brought forth their little ones, by reaſon of a ſmall worme that preſently breedes about their throat, which chokes them. And at the ſame time, the males likewiſe miſcarrie. See what a little matter (to ſpeake of) bringes them to their death! and yet a wonder it is to conſider, how one of them when it liſt will kill a ſerpent: for it will take him faſt by the chaws, and neuer lin biting till ſhe hath diſpatched him. Theſe little beaſts breed no where but in plain and champion countries, namely, ſuch as be full of chinks and creuiſes in the ground. It is reported, that there be of them in India, three foot long: where the people of the country vſe their legs and thighes for fawes, when they be thoroughly dried. Theſe Locuſts come by their death another way, beſides that aboue-named: for when the wind takes them vp by whole troupes together, they fall down either into the ſea, or ſome great ſtanding pooles. And this many a time happens by meer chance and fortune; and not (as many haue ſuppoſed in old time) becauſe their wings are wet with the night dew. For euen the ſame Authors haue written, that they flie not in the night for cold. But little know they, that it is ordinarie with them to paſſe ouer wide and broad ſeas, and to continue their flight many daies together without reſt. And the greater wonder is this, that they know alſo when a famine is toward: in regard wherof, they ſeek for food into far countries: in ſuch ſort, as their comming is euer held for a plague of the gods, proceeding from their heauie wrath and diſpleaſure. For then commonly they are bigger to be ſeen, than at other times: and in their flight they keepe ſuch a noiſe with their wings, that men take them for ſome ſtrange fowles. They ſhade and darken the very Sunne as they flie, like vnto a great cloud: inſomuch, as the people of euery country behold them with much feare, leaſt they ſhould light in their territorie, and ouer-ſpread the whole countrey. And verily their ſtrength is ſuch, that they hold out ſtill in their flight: and as if they had not enongh of it to haue flowne ouer ſeas, they giue not ouer to trauerſe mightie great countries in the continent. And looke in what place ſoeuer they ſettle, they couer whole fields of corne with a fearefull and terrible cloud: much they burne with their very blaſt, and no part is free but they eat and gnaw euen the very dores of mens dwelling houſes. Many a time they haue been known to take

their flight out of Affrick, and with whole armies to infest Italie: many a time haue the people of Rome, fearing a great famine and scarsitie toward, been forced to haue recourse vnto Sybils books for remedie, and to auert the ire of the gods. In the Cyrenaicke region within Barbarie, ordained it is by law, euery three yeares to wage war against them, and so to conquer them: that is to say, first to seeke out their neasts, and to squash their eggs; secondly, to kill all their yong; and last of all, to proceed euen to the greater ones, and vtterly to destroy them: yea, and a grieuous punishment lieth vpon him that is negligent in this behalfe, as if he were a traitor to his prince and countrey. Moreouer, within the Iland Lemnos there is a certaine proportion and measure set down, how many and what quantitie euery man shall kill; and they are to exhibit vnto the magistrate a just and true account thereof; and namely to shew that measure full of dead Locusts. And for this purpose they make much of Iaies, Dawes, and Choughes, whom they doe honour highly, because they flie opposite against the Locusts, and so destroy them. Moreouer, in Syria they are forced to leuie a warlike power of men against them, and make riddance by that meanes. See in how many parts of the world this hurtfull and noisome vermine is dispersed and spread: and yet in Parthia they are taken for very good meat. The voice that they haue (such as it) seemes to come from the hinder part of their head: for about that place where the joincture is of the shoulders to the nape of the neck, they are thought to haue certain teeth, which by grating and grinding one against the other, doe yeeld a kind of crashing noise: and namely, about the time of both the Æquinoctials: like as the Grashoppers at midsummers Sunstead. Locusts engender after the manner of all other Insects which do engender: to wit, the female carries the male: and she lying vnderneath, bends vp the very end of her taile against the other: and thus they continue a good while ere they part asunder. To conclude, the males of all this kind be lesse than the females.

Chap. XXX.

¶ *Of the ordinarie Pismires of our countrey in Italie.*

MOst part of Insects do breed a grub or little worme. For euen the very Ant in the Spring time doth bring forth such wormes like egges. These silie creatures labor and trauell in common, as the Bees do: this only is the difference, that Bees do make their owne meat, whereas these store vp only their food and prouision. As touching their strength, if a man would compare the burdens that they carie, with their own bodies, he wil find and confesse, that there is not a creature againe in the world, for that proportion, stronger. And how doe they carrie them? euen with their very mouthes. Howbeit, if they meet with any greater load than they can bite betweene their chawes, then they set their shoulders to it, and with their hinder legs also make meanes to driue it forward. They haue among them a certaine forme of Commonwealth: they remember: they are not without care and fore-cast. Looke what seedes or graines they do lay vp for prouision, sure they will be to gnaw it first, for feare they should sprout and take root againe, and so grow out of the earth. If a corne or seed be too big for their carriage, they diuide it into peeces, that they may go with it more easily into their house. If their seeds within, chance to take wet, they lay them abroad, and so drie them. They giue not ouer worke by night, when the Moone is at the full: but when she is in the change, they rest and play them. When they are at worke, how painfull are they? how busie, how industrious? And for as much as they make their purueiance in diuers places, and bring from al parts, without knowledge one of the other: they keepe among them certaine market daies, for a mutuall enteruiew and conference together. And verily, it is a world to see, how then they will assemble; what running, what greeting, what entercourse and communication there is between them, whiles they are inquisitiue, as they meet one with another. What newes abroad: euen like merchants at a Burse. Their waifare is so ordinarie and continual, that we may see the very hard flint and pebble stones worn with their passage too and fro: we may see (I say) a very path-way made where they vse to goe about their worke: whereby, let no man doubt of what force and power continuall vse is, of any thing whatsoeuer, be it neuer so little. Of all liuing creatures, they only and men, doe enterre and burie their dead among them. To conclude, thoroughout all Sicilie a man shall not see a flying Ant.

CHAP.

Chap. XXXI.

¶ *Of Indian Pismires.*

IN the temple of *Hercules* at Erythræ, there were to be seen the horns of a certain Indian Ant, which were there set vp and fastned for a wonder to posteritie. In the countrey of the Northerne Indians, named Dardæ, the Ants do cast vp gold aboue ground from out of the holes and mines within the earth: these are in colour like to cats, and as big as the * wolues of Ægypt. This gold beforesaid, which they worke vp in the winter time, the Indians do steale from them in the extreme heate of Summer, waiting their opportunitie when the Pismires lie close within their caues vnder the ground, from the parching Sun. Yet not without great danger: for if they happen to wind them and catch their sent, out they go, and follow after them in great hast, and with such fury they fly vpon them, that oftentimes they teare them in pieces; let them make way as fast as they can vpon their most swift camels, yet they are not able to saue them. So fleet of pace, so fierce of courage are they, to recouer gold that they loue so well.

* Q. Foxes.

Chap. XXXII.

¶ *The diuers generation of some Insects.*

MAny Insects there be that breed after another sort than the former aboue specified: and principally of dew which settles vpon the radish leafe in the beginning of the Spring. For being made thicke, and hardned with the heate of the Sun it growes to the bignes of the grain of Millet. From it ariseth a little grub, and three daies after it becomes a kind of canker-worme: and so in processe and tract of time it groweth bigger without mouing at all, and gathereth an hard husk or case about her: only if a man touch the webby panicles wherein the said worme lieth inwrapped, it will seem to stir. This is called Chrysalis: and after some time, when the hex or husk is broken, he proueth a faire flying butter-fly.

Chap. XXXIII.

¶ *Of Insects that breed in wood, and of wood.*

SEmblably there be some Insects ingendred of raine drops standing vpon the earth, and others also of wood: for not only the ordinarie wood-wormes breed in timber, but also certain Brees and horse-flies come of it, yea, and other such like creatures, whensoeuer the wood happen to be dotted with ouer-much moisture. Like as within one of our bodies there haue bin found broad wormes of 30 foot in length, yea and sometimes longer. Also there haue bin seen in dead carions many worms: and the very flesh of liuing men is apt to breed such vermin: and so is the haire of the head to harbor lice, of which filthy & loath some creatures both *Sylla* the Dictator, and also *Aleman* (one of the most renowned Greeke Poets) perished. Moreouer, birds are much infested and troubled therewith. And as for Feasants, they will dy thereof vnlesse they bestrew themselues with dust. Of such beasts as carry haire, it is verily thought that the Asse alone and sheep are free from this kind of vermin. Some kind of cloath likewise is apt to ingender lice, and especially those which are made of wooll that sheepe bare which were worried of wolues. Ouer and besides, I find in some writers, That there is some water will ingender this vermin if we do but wash therein. For euen in wax there will breed mites, which are thought to be of all creatures that haue life, the very least. Also ye shall haue others again ingender of filthy dry dust, namely fleas, which vse to skip and hop with their hinder feet lustily like these tumblers and vautors. Last of all, there be that come of a certaine moist pouder in cranies of the ground, and those be our ordinary little flies.

Chap. XXXIV.

¶ *Of one kind of creature that hath no passage to void excrements.*

THere is a creature as foule and ill-fauoured as the rest, which hath euermore the head fast sticking within the skin of a beast, and so by sucking of bloud liueth, and swells withall: the only liuing creature of all other that hath no way at all to rid excrements out of the

body: by reason whereof when it is too full, the skin doth crack and burst, and so his very food G
is cause of his death. In Horses, Asses, and Mules these do neuer breed: in Kine and oxen they
be common, and otherwhiles in dogs, who are pestered not only with these ticks, but also with
all other vermine aboue named. And in Sheepe and Goats a man shall finde none other but
ticks. It is as strange a thing also to see, how the horse-leeches which be nourished in standing
waters of fens, are thirsty after bloud: for these will thrust their whole head into the flesh, for
to draw and suck out bloud. Finally, there is a kind of flies that plagueth dogs and none else:
they are busie commonly about their eares, where they will bite and sting them shrewdly; for
there they cannot come by them with their teeth to snap and kill them.

Chap. XXXV. H

¶ *Of Moths and Gnats.*

WOoll and cloth when they be dusty breed moths, especially if a spider also be gotten within them. For the Spider is very thirsty; and by reason that he drinketh vp all the moisture of the cloth or wool, he increaseth the drinesse much more. In paper also they will ingender. A kind of them there is which carry their coats and cases with them, as cockles and snailes do; but they haue feet to be seen. If they be turned out of their coats or husks, they presently die. If they grow still they wil proue to be Chrysalides. The wild fig tree breeds certaine Gnats called Ficarij. As for the Cantharides or French greene Flies, they be I
bred of little wormes in Fig trees, Peare trees, wilde Pines, or Pitch trees, the Eglantine Brier, and Roses. A venomous vermin this is, howbeit medicinable in some sort. The wings be they that are good in physick: cast them away, & the rest is deadly. Moreouer, there be other gnats that foure things will ingender. And no maruell, seeing there be some wormes found in snow, which are white, if the snow be but thin and new-fallen. But in case it haue lien long, and bee deep a man shall find in the mids within those which are red (for snow also if it be old waxeth red) rough and hairy, greater also than the rest, and dull of motion.

Chap. XXXVI. K

¶ *Of the fire-Fly called Pyralis, or Pyrausta.*

THe fire also, a contrary element to generation, is not without some liuing creatures ingendred therein. For in Cypres, among the forges and furnaces of copper, there is to be seen a kind of four-footed creature, and yet winged (as big as the greater kind of flies) to flie out of the very midst of the fire, and called it is of some Pyralis, of others Pyrausta. The nature of it is this; so long as it remaines in the fire it liues: but if it chance to leap forth of the Furnace, and fly any thing farre into the aire, it dieth. There is a riuer in the kingdome of Pontus called Hypanis, which about the summer Sunstead vseth to bring down the streame thin pellicles or bladders like to grape kernels: out of which there breaks forth and issueth a foure fooL
ted flie, like vnto those aboue named; and it liueth not aboue one day, whereupon it is called
Hemerobion [i. a day-fly.] All other Insects of like sort may continue and liue a seuen-night.
The Gnat and the little wormes three weeks: but such as bring forth their yong aliue, may endure a full moneth. As for the metamorphosis of these creatures from one forme to another, it is most commonly performed in three daies, or foure at the most. All the rest of the winged M
kind lightly die in Autumne: among which, the brees and horse-flies are ordinarily blind first. To be short, those flies which haue bin drowned, and so come to their death, if they be laid and kept in hot cinders or ashes, will come again to them selues and reuiue.

Chap. XXXVII.

¶ *A discourse Anatomicall, of the nature of liuing creatures part by part, according to their particular members.*

The head. IT remaines now to treat of the seuerall parts of the body, and ouer and aboue the former description, to particularize and set down the story of one member after another. First therefore this is generall, that all liuing creatures whatsoeuer hauing bloud, haue also heads and few

A few of them haue cops or crested tufts vpon their heads, vnlesse it be birds, and those be of di- Crests, tufts,
uers forms and fashions. The Phœnix is adorned with a round plume of feathers, out of the and combes.
midst of which growes another little pennache. Peacockes carry vpon their heads a tuft (as it were) of little hairy trees: and the Stymphalides a lock of crisped and curled haires. Feasants haue feathers standing vp like hornes. The pretty Titmouse or Nonett is filletted or coifed vpon the head: and in lieu thereof, the Lark hath a little peruke of feathers, whereupon at first it was called Galerita, but afterwards after the French word Alanda, and of it one of the Roman legions tooke the name, because of their pointed Morions. We haue written alreadie of the Ginny or Turky cocks and hens, vpon whom Nature hath bestowed a folding creft, lying from the very bill, ouer the midst of the head, vnto the nape of the necke. She hath giuen also vnto all the sort of Seamewes, Fen ducks, and Moore-hens, certain cops and crisped tufs: to the
B Woodpecke also and Balcare crane. But aboue all others, the house dunghill cocks carry vpon their heads the goodliest ornament of their combe, and the same consisting of a massie and fleshie substance, indented besides like a saw. And yet we may not properly say it is either flesh, grisle, or callositie, but compos'd of some particular matter by it selfe, which cannot well be named. As for the crests of dragons, I could meet with no man hitherto that euer saw them.

To come now to Horns, there be many fishes, as well of the sea as fresh waters, and also Ser- *Hornes.*
pents, that haue horns in diuers and sundry sorts. But to speak a truth and properly, they be no hornes indeed, for those pertain only to four-footed beasts. As for *Aelæon* and *Cippus*, of whom we read in our Latine story that they had hornes, I take them to be meer fables and no better.
C Certes in nothing more hath Nature taken her pleasure than in this, as if she had meant to delight and sport her selfe in these armes and weapons of beasts. For in some she hath made them knagged and branched, as in Deere, both red and fallow: in others plain and vniforme without tines, as in the Spitters, a kind of Stag, which thereupon be called Subulones in Latin, for that their horns be like a shoomakers * Nall blade. There be againe which haue broad hornes, and Subulæ.
plaited like a mans hand, with fingers standing out of them: whereupon the beasts that beare them be called Platycerotes, [i. broad horned.] Roe bucks haue by nature branched heads, but they are small: and these do not mew and cast them yearely, as the stag and bucke. All the sort of rams be armed with crooked horns, turning and winding with certain revolutions as if they were gantlets or whorlebats, giuen them by nature to thumpe and jurre withall. Buls hornes be
D straight and vpright, ready alwaies to do a mischiefe. The females of this kind, to wit, Cowes, are horned as wel as Buls: whereas in many others the males only be in that wise armed. The wild Goats, called Roch-goats, haue their hornes turning backeward, whereas in fallow Deere they bend rather forward. There is a kind of Roe-buck called in Africke Addace, which the Greeks haue named Strepsiceros, and they haue vpright hornes: but they are furrowed and wreathed round about as if they were ribbed like the backe of a lute; or rather chamfered like the ridge of a land, and alwaies sharp pointed with a tip. Ye shall haue droues and herds of beasts, namely Kine and Oxen in Phrygia, which wil stir and wag their horns like eares: and those in the kingdome of the Troglodites, cary their hornes pendant directly to the ground, which is the cause, that as they eat they are forced to beare their necks awry, and looke atone side. Some haue but
E one horne apiece, and that either in the midst of the forehead, as the Oryx; or else in the nose and muffle, as the Rhinoceros, whereof we haue written before. In sum, there be that haue strong and hard horns to butt with: others to strike and gore withall: some crooking forward, others bending backward. In some, they are good only to tosse and fling, and that in diuers manners. For there be of them that giue back, others turn one against another, and some euen ioyne and meet together: but all run vp sharp pointed in the end. A kind of beasts there is that vse their horns in stead of hands to scratch their body when it itches: and others serue the turn to sound the way before them, as certain shel-Snails and Winkles. And these horns giuen for this purpose are some of them of a fleshy substance, as those of the serpents called Ceraste: and otherF whiles one alone without a fellow. As for the Periwinckles and Snailes aforesaid they are neuer without twain apiece: and at this passe they haue them, to put out and draw in as they list. In Buffles horns the barbarous people of the North parts vse to drinke: and ye shall haue the hornes of one Buffles head to hold full two measures called Vrnæ, which is about 8 gallons. In some countries men head their speares and iauelins with horne. With vs in Italy they be cut into thin plates, and serue for lanterns: and surely they are so transparent and cleare, that they

make

make the candle within inclosed to cast the greater light, and farther off. Nay, they are good G
for many other toies of delight and pleasure: insomuch as some paint and die them with sun-
dry colours, others vernish and annele them: and ye shal haue men to make thereof their fine
inlaid works in Marquetrie of diuers colours, called thereupon Ceroſtrata. All horns in man-
ner be hollow, saue that as they grow toward the pointed tip, they be solid and masſie: onely
Deers both red and fallow are sound and entire throughout: and euery yere they fal off. Huſ-
bandmen in the countrey, when they see their Oxe hooses furbatted and worne too neere the
quick with ouermuch trauell, anoint their hornes with sweet greaſe, & that is the way to make
them grow again. And in very truth the hornes of theſe beasts are of so pliable a substance, and
easie to be wrought, that as they grow vpon their heads, euen whiles the beasts are liuing, they
may with boiling wax be bended and turned euery way as a man will: yea, and if they be cut H
when they break new forth out of the skin, they may be easily writhed to grow seueraly in sun-
dry parts, so as euery head may seem to haue foure hornes. For the most part, the hornes of
Cowes are more tender and thinner than the other; like as we see it is in the females of smal-
* With vs it is otherwiſe. ler beasts: * Ewes haue none at all: ne yet Hinds and Does: no more than the beasts that haue
feet cloven & diuided into many toes: or those that be whole hoofed, except the Indian asse,
who is armed with one horne and no more. Beasts cloven footed in twaine haue likewise two
hornes: but none at all haue they which are toothed in the vpper mandible. They that make
this reason, because the matter of their teeth runs al into the horn, and so contrariwise, are de-
ceiued, and soon conuinced by this, That Hinds & Does are toothed no more than Stags and
Bucks, and yet are not horned. In other beasts the hornes grow to the very bone of the head, in I
Deere only they come out of the skin, and are graffed no deeper. Fishes of all liuing creatures
haue the biggest heads for the proportion of their bodies, haply because they might the bet-
ter diue vnder water and sink to the bottom. No kind of Oisters haue any head at all, no more
than Spunges, or any other in manner, which want al their fences but only feeling. Some haue
heads indeed, but within their body, and not diuided apart from it, as Crabs and Creifishes.

Haire. Mankind of all liuing creatures hath most haire on the head, euen men as much as women,
as we may see in those countries where they neuer cut their haire, but let it grow. And namely
in Sauoy, Dauphine, and Languedoc about the Alps, where men and women both weare long
haire; and thereupon that part of France is called Comata. And yet this is not so general, but K
that the nature of some land and soile may make some alteration and varietie. For the Myco-
nians naturally haue no haire at all: like as the Caunians be all subiect to the disease of hard
and swelling spleens, euen from their mothers womb. Some reasonlesse creatures likewise are
by nature bald, as Ostriches, and certain * water Rauens, which of the Greeks are named there-
* Or rather Alpine. upon Phalacro-coraces. Seldom do women shed their haire clean, and become bald: but neuer
was any guelded man knowne to be bald: nor any others that be pure virgins, and haue not sa-
crificed vnto *Venus*. The haire growing beneath the ventricles of the brain, & vnder the crown
of the head, like as also about the temples and eares, falls not off quite. Man alone of all crea-
tures groweth to be bald, I speake not of those that are so by nature. Men, women, and horses
wax gray haired. Men and women both begin at the forepart of their heads to be grisſie, and af- L
terwards behind. Men and women alone be double crowned.

Brain pan. Some creatures haue the bones of their skull flat, plain, thin, and without marrow, and the
same vnited or ioined together by certain sutures or seams indented & toothed on either side,
which run one into another. The ruptures and cracks of the brain pan cannot be consolidated
and sauldred perfectly again: but if the spels and pieces be gently taken out, and but smal, there
is no danger of death: for in their place there will grow a certaine callous cicatrice or fleshie
substance that will supply in some sort that defect. Bears of all others haue the tendrest suls;
and Parrats the hardest, as we haue said before in place conuenient.

Braines. Moreouer, all liuing creatures that haue bloud haue likewise brains: yea, & those in the sea
which we call Soft-fishes, although they haue no bloud at all, as namely the Pour-cuttles or M
Polypes. But man for his bignes and proportion hath most braine of all other, and the same is
the moisteſt & coldest part he hath within his body. Infolded it is within two tunicles or kels,
both aboue and beneath: whereof if the one be pierced and wounded [to wit, *Pia mater*] there
is no way but present death. Also, men commonly haue more braines than women. And
both of them haue neither bloud nor veines therein: as for that which is in other creatures, it
wanteth

A wanteth all kind of fat. The learned Anatomists, who haue searched diligently into the nature
of things, do teach vs a difference between the brain & marrow of bones: for, brains in the boy-
ling and seething, wax hard. In the midst of the braine of all creatures there be certaine little
* bones. Man alone in his infancie hath his brain to pant and beat: and fully settled it is not, nor *Oſſicula, some rede Ojcula, holes.
confirmed, before that he begins to speak. Of all parts necessary for life, it is placed highest, and
next vnto the cope of head and heauen both: without flesh, without bloud, without filth & or-
dure. And in truth, it is the fort and castle of all the fences: vnto it all the veines from the heart
do tend: in it they all do likewise end. It is the very highest keep, watch-tower, and sentinell of
the mind: it is the helme and ridder of intelligence and vnderstanding. Moreouer, in all crea-
B tures it lieth forward in the front of the head: and good reason, because all our fences bend that
way just before our faces. From our braine comes sleepe, from thence proceedeth our nappes,
our nods, our reeling, and staggering. And looke what creature seeuer wanteth braine, the
same sleepeth not. Stags (by report) haue within their heads twentie little wormes, to wit, in
the concauity vnder their tongue, and about that ioincture where the head is graffed to the chin
bone.

Man alone hath not the power to shake his eares. Of flaggie, long, and hanging eares, came *Eares.*
the syrnames first of the *Flacci* (families & houses in Rome.) There is no one part of the bodie
costeth our dames more than this, by reason of their precious stones and pendant pearls there-
at. In the East countries, men also as wel as women, think it a great grace and braucry to weare
C earings of gold. As touching their proportion, some creatures naturally haue bigger or lesser
than others. Deere only, the fallow as well as the red, haue them slit and as it were diuided. In
Rats and mice they be hairy. To conclude, no creature hath ears but those that bring forth their
yong aliue: and none of them are without, saue onely Seales, Dolphins, Vipers, and such fishes
as were called Cartilaginous and griſtly. And these all in stead of ears, haue certaine holes, or
conduits, except the foresaid griſtly fishes, & the Dolphins: and yet manifest it is, that they do
heare wel enough. For delighted they be with musick: and vpon some great noise and sudden
crack they are astonished, and then easily taken. But maruel it is how they should heare as they
do: neither can I comprehend the reason and means thereof, no more than I am able to shew
how they do smell? for no Organs and Instruments haue they thereof to be seene, & yet there is
D not an hound vpon the land scents better, nor hath a finer nose than they. Of all fouls, the Like-
owle and the Otus alone, haue feathers like eares: the rest haue only holes to heare by. And af-
ter the same manner skaled fishes and serpents. In Horses, Mules, and Asses, and all such as serue
either pack or saddle, the ears are tokens of their courage more or lesse, and will shew what sto-
mack is within them. If they be tired and weary, they hang down flaggie: be they afraid, you
shall perceiue them to wag too and fro: in heat of fury they stand pricking vp: in sicknes they
lie downe.

Man only of all creatures hath a Face and Visage: the rest haue either muzles and shouts, or *Face or Vi-
sage.*
else bils and beakes.

Other creatures haue Foreheads also as well as men: but in mans alone we may see & reade *Forehead.*
E sorrow & heauinesse, mirth and joy, clemencie and mildnesse, cruelty, and seuerity; and in one
word, guesse by it, whether one be of a good nature or no?

In the ascent or rising of the forehead, man hath Eie-brows set, like to the eaues of an house; *Eie-browes.*
which he can moue as he list, either both at once, or one after another: and in them is shewed
part of the mind within. By them we denie, by them wee grant. These shew most of all others,
pride and arrogancie. Wel may it be that pride doth appeare and settle in some other part, yet
here is the seat & place of residence. True it is, that in the heart it beginnes, but hither it moun-
teth and ascendeth, here it resteth and remaineth. No part can it find in the whole body more
eminent and hauty, and withall more steepe than the browes, wherein it might rule and raigne
alone without controlment.

F Next vnder the browes is the Eie, the most precious member of the whole body; which by *The Eie.*
the vse of light makes difference between life and death. Yet hath not Nature giuen eies to all
creatures: Oisters haue none: and for some other shel-fishes, it is hard to say whether they haue
any or none. As for Scallops, if a man stir his fingers against them as they lie gaping open, they
wil shut, as if they saw. And the shel-fishes called Solenes, giue backe if any edge-toole come
neere vnto them. Of foure-footed creatures, Moldwarpes see not at all: a certaine shew and
forme

forme they haue of eies to be seen, if a man take off the skin that lieth ouer the place. Moreouer, among fouls of the aire, those of the Herons kind, which are called Leuci, for that they be white, want (by report) one eie. And for certaine, in case of Augurie, if these birds flie either into the South or North, it is holden for an excellent good presage, for they assure men that peril is past and promise securitie. *Nigidius* affirmeth, That neither Locusts nor yet Grashoppers haue eies. As for snailes and such like, the two little horns that they put forth, serue them in stead of eies, as they sound or trie the way before them. The earth-mads and all the sort of worms & grubs, are without eies. Men alone of all liuing creatures haue eies of diuers colours, some of one, and some of another. For all other creatures of one and the same kind, are eied alike. Howbeit, some horses there be that extraordinarily haue *red eies. But in men it is hard to set down the infinit variety and difference in them: for some haue great glaring eies: others againe as little & as pinking. Others also there be that haue them of a moderate and reasonable bignes. Some be goggle eied, as if they would start out of their heads, and those are supported to be dim-sighted: others be hollow eied, and they are thought to haue the best and clearest sight: like as they who for colour haue goats eien. Moreouer, ye shall haue some men, who can discern a far off: others againe that see not but neere at hand. Many there are, whose eie sight dependeth of the Sunnes light: for let the day be ouercast and cloudy, or the Sun gon downe, they see just nothing: and others contrariwise there be, that all the day time haue but a bad sight; yet in the night season they see better than any others. As concerning 2 balls or apples in one eie, as also who they bee that can bewitch and hurt folk with their very eie, sufficient hath bin said already. *Gray eies commonly in the dark see more cleare than others. It is reported of *Tiberius Cæsar* the Emperor to haue had this property by himself, that if he were awakened in the night, for a while he could see euery thing as well as in the cleare day light; but soon after, by little and little, the darknesse would ouercast and shadow all again: a gift that no man in the world was euer known to haue but himselfe. *Augustus Cæsar* of famous memory, had *red eies like to some horses: and indeed the wall-eied he was, for the white thereof was much bigger than in other men; which also was the cause, that if a man looked earnestly vpon him, and beheld him wistly (and a man could not anger him worse) he would be displeased, & highly offended. *Claudius Cæsar* had a fleshy substance about the corners of his eies, that tooke vp a good part of the white, and many times they were very red and bloud shotten. *C. Caligula* the Emperor, his eies were euer set in his head, and stiffe again. *Nero* had a very short sight; for vnlesse he winked (as it were) and looked narrow with his eies, he could not well see ought, were it neuer so neere. Twentie couple of professed masters of fence and sword-plaiers there were in the fence-schoole, that *C. Caligula* the Emperor maintained: & among the rest two there were & no more, whom a man could not make to winke, or once to twinckle with their eies: present before them what weapon he would, or make offer to strike, so steady & firm were they: and therfore they euermore carried the prize, & were inuincible. So hard a matter is it for a man to keep his eies from twiring; and many men naturally cannot chuse but be euermore winking and twinckling with their eies: but such are holden for fearful and timorous persons. None haue their eyes all of one color: for the b[illegible] or apple in the midst is ordinarily of another color than the white about it. Neither in any one part of the body are more signes and tokens to be gathered of the affection and disposition of the heart, than in the eie, of man especially aboue all other creatures. By it we may know whether one be modest, staied, sober, gentle, mild, pittifull or no. It sheweth malice, hatred, loue, beautifulnesse, sorrow, and joy. In the cast also of the eie there is as much variety; for some haue a furious, cruell, terrible, fierce, sterne, and fierie looke: others shew grauitie and constancie in their eie. Some haue an ouerthwart regard with them, others looke askew and awry. One while a man lookes atone-side, and hath a wanton sheeps eie: another while he casteth his eie downe, and lookes heauily: and when he list againe, hee can giue one a pleasant and merry looke. In briefe, the Eies are the very seat and habitation of the minde and affection. For one while they be ardent and fierie: otherwhiles they be bent and fixed vpon a thing: one while they twinckle, another time they winke close and say nothing. From them proceed the teares of compassion: When wee kisse the eie, we thinke that we touch the verie heart and soule. From hence commeth our weeping: from hence gush out those streames of water that drench and run downe the cheeks. But what might this water and humour be, that in the hearts griefe issueth in such plentie, and is so ready to flow? Where may it lie at other times, when we are in joy, in mirth, and repose? it cannot

A cannot be denied, That with the Soule we imagine, with the minde we see, and the Eies as vessels & instruments receiuing from it that visuall power and faculty, send it soon after abroad. Hereupon it commeth, that a deep and intentiue cogitation blinds a man so, that he seeth not; namely, when the sight is retired far inward. Thus it is, that in the Epilepsie or Falling-sicknes the eies are open and yet see nothing: for why? the mind within is darkened. Moreouer, Hares haue this qualitie, to sleep open eied: and so do many men besides them: and this the Greekes do expresse by the terme κοιμᾶσθαι τὰ ὄμματα. Nature hath framed and compounded the eie, of many thin membranes or skins. As for those tunicles without-forth, they are tough and hard * like horn, to withstand the iniuries of heat and cold: and those she hath ordained eftsoones to be cleansed and purified with the moisture of teares; to the end that they should be slipperie and moueable, for to turne quickly and to shift from all that may offend. As for the middle part & membrane of the eie, she hath set in a ball, like a window made of transparent horne [or rather of a grape:] the little compasse whereof containeth all the sight of the Eie, and suffereth it not to wander and roll here and there, but directeth it as it were within a certaine pipe or small conduit: by which means also (to note by the way) the apple being gathered into so narrow a circle, doth easily auoid all inconueniences that are incident vnto it, for to annoy the same. This ball and point of the sight is compassed also round about with other circles of sundry colors, black, blewish, tawny, russet, and red; to the end that by this medley and temperate mixture of colors enuironed with the white besides, the light might be let in & represented to the Optick-sinews: and also by a temperat reuerberation and beating backe from those other colours, it should not dazle or offend the apple with the exceeding brightnesse thereof. In sum, this mirror or glasse-window, is so perfect and so artificially contriued, that as little as the ball of the sight is, a man may see himselfe ful and whole in it. And this is the cause that many fouls, from a mans fist are ready to peck at the eies aboue all other parts, for that they would gladly fort and draw vnto their owne representation and image, which they see in the eies, as vnto that which they naturally affect. Certain sumpter-horses and mules, & such like beasts of carriage only, are troubled with sore eies, and diseased that way at euery change and increase of the Moon. But man alone, in the catarrhact & suffusion of the eie, by voiding from it a certain humor which troubled the sight, doth recouer and see again. There haue bin many known blind 20 yeares and more, & yet afterwards inioied the benefit of their eies. Some haue bin borne blinde, without any fault or defect of their eies. Diuers men likewise haue suddenly lost their sight by some secret accident, and no outward offence knowne to giue occasion thereof. Many right skilfull masters in Chirurgerie, and the best learned Anatomists are of opinion, That the veines of the eies reach to the braine. For mine owne part, I would rather thinke that they passe into the stomacke. This is certain, I neuer knew a mans eie pluckt out of his head, but he fell to vomiting vpon it, & the stomack cast vp all within it. We that be citizens of Rome, haue a sacred and solemne manner and vse among vs, To close vp their eies that lie a dying, and are giuing vp the Ghost; and when they be brought to the Funerall fire, to open them againe. The reason of this ceremonious custom, is grounded hereupon, That as it is not meet for men aliue to haue the last view of a mans Eie in his death, so it is as great an offence to hide them from heauen, vnto which this honor is due, & the body now presented. Man alone is subiect to the distortion & depraued motion of his eies. Hereof are come the surnames of certain families in Rome, *Strabones* & *Pæti*: for that the first of those houses were squint-eied, and had rolling eies. Those that were borne blink but with one eie, our countrymen called *Corlites*: as also them that were pinke-eied and had very small eies, they termed *Ocelle*. As for such as came by those infirmities by some iniurie or mischance, they were surnamed *Lucini*. Moreouer, we see that those creatures which ordinarily do see by night (as Cats do) haue such ardent and fierie eies, that a man cannot indure to look full vpon them. The eies also of the Roe-bucke and the Wolfe are so bright, that they shine again, and cast a light from them. The sea-calues or Seales, and the Hyenes, alter eftsoones their eies into a thousand colours. Ouer and besides, the eies of many fishes do glitter in the night, when they be drie: like as the putrified and rotten wood of some old trunke of an oke or other wood. Wee haue said before, that those winke not nor shut their eie-lids, who cannot roll their eies atone-side, but are faine to turne their whole head withall when they would see a thing that is not iust before them. The Chamæleons (by report) rol their eies all whole euery way as they list, vp and downe, too and fro. Crabs looke awrie. And yet such fishes as are inclosed within a brittle

* Glaucis

* Cæsio

* Glauci.

brittle and tender shell, haue their eies inflexible & stiffe. Lobsters and Shrimpes for the most part, haue their eies standing out very hard, albeit they be couered with the like shells. Those that haue hard eies, are not so well sighted as those that haue moist. It is commonly said, that if a man pluck the eies out of the heads of yong serpents, or yong Swallows, they wil haue new again in their place. All Insects and other creatures that lie within hard shels, stir their eies as four-footed beasts do their ears: but in those that haue tender shels, their eies be hard. And all such, as also fishes & Insects, haue no lids to their eies, and therfore couer them not. But there be none without a thin membrane or pellicle ouer them, which is cleare and transparent like glasse.

Eie-lids. Men and women haue haire growing on the brims of both Eie-lids: but women do colour them euery day with an ordinarie painting that they haue: so curious are our dames and would so fain be faire & beautiful, that forsooth they must die their eies also. Nature ywis gaue them these hairy eie-lids for another end, namely, for a palaisade as it were & rampier of defence for the sight, yea, and to stand out like a bulwark for to keep off and put by all little creatures that might come against the eies, or what things soeuer els should chance to fall into them. Some write, That the haire of the eie-lids will shed and fal away, but not without some great injury, and namely, in such persons as be ouermuch giuen to lecherie. No other liuing creatures haue these haires, but such as otherwise be clad all ouer their bodies with haire or feathers. But, as four-footed beasts haue them in the vpper lid only, so Fouls haue none but in the nether: like as those serpents which are tender skinned and four-footed, as Lizards. The Ostrich is the only foule which hath haire on the vpper eie-lidde. The Ape hath on them both as well as man. Moreouer, all fouls haue not eie-lids, and therefore such do not winke, namely, those that bring forth liuing creatures. The greater and heauier foules, when they would close their eies doe it with drawing vp the nether lid. The same also twinkle by means of a pellicle or skin comming from the corners of their eies. Does and such like birds wink with both eie-lids: but four-footed beasts that lay egs, as Tortoises and Crocodiles, vse the nether lid only, without any twinkling at all, because their eies be very hard. The vtmost compasse or edge of haire in the vpper lid, the Latines called in old time *Cilium*, and thereof came the name of the brows, to be *Supercilium* in Latine. This brim of the eie-lid, if it be diuided by any wound, cannot be drawne together againe: like as some few parts besides of mans body.

Bals of cheeks Vnder the eies, are the balls of the Cheeks, which men and women only haue; which in old time they called *Genæ* in Latine. And by the law of the twelue Tables, women were expressely forbid not to teare, rent, or scratch them in any case with their nails. This is the feat of bashfulnesse and modesty: heare appeareth most of all the rednesse of blushing. Vnder them, are the hollow pits of the cheekes, wherein mirth and laughter do lodge and inhabite.

Nose-thrils. Man only hath his Nose standing forth aloft, which now adays they dedicate to slie scoffing and derision, insomuch as they attribute that terme do dry mockers and flowters. And verily there is not a creature besides, that hath his nostrils so bearing out. [As for birds, serpents, and fishes they haue holes only to smel at, without any other nosthrils to be seen:] & hereof come the surnames of *Simones* and *Silones*, whereof the former haue flat noses, the other are hooked and camoise nosed vpward. Infants haue bin known many times when they are seuen moneths old, to want the holes and passages both of nose and eares.

Lips. Then follow the Lips: some men there be that put them far out, by reason that they are gag-toothed or tut-mouthed, and those are called *Brocci*. Others againe who are blabber-lipped, are named in Latine *Labeones*.

Mouth. As for the mouth, all creatures haue it that bring forth their yong aliue: and either it is gentle and pliable, or else hard and vnruly; as we see horses; that either willingly receiue, or else refuse the bit. By which also we giue to men, the tearme either of modest and good countenance, or else of shameleese and vntoward. But in stead of mouth and lips both, Nature hath giuen to all foules sharpe Bills of an horny substance, and as many of them as liue vpon rauin and prey, haue them hooked inward: but such as gather and pecke onely, they haue straitbeakes. As for those that either grase, root, or pudder in mud, like to swine, they are broad and flat billed. As for horses, mules, and such like, they vse their mouthes in stead of hands, to gather in their food as they either feed in pasture, or be at racke and manger. And the wider mouthes haue they that liue of killing and deuouring other beasts.

No

No creatures liuing, but man and woman, haue Chins and Iaws. The riuer Crocodile alone moueth the vpper iaw: the land Crocodiles chew as other creatures do, but only bias. *The Chin & Iaw.*

Of Teeth, there be three sorts: for either they be framed like saws, or els set flat, euen, and leuell: or last of all, stand gabbing out of the mouth. The saw teeth run one betweene another, as if two combes grew together, because they should not weare if they met one with another, as we see in serpents, fishes, and dogs. Horses & men haue their teeth of one euen leuell. The bore, the water-horse, and the Elephants, haue their tusks and fangs sticking forth. Of those teeth which are smooth and meet just one against another, such as diuide and cut the meat, be broad edged, as the fore-teeth: those that grind and chew, be double, and stand within the chaw: but such as seuer and part the meat in the mouth, be sharp pointed: and we call them our eie-teeth; the Latines *Caninos*, or Dog-teeth. And these are they, that of saw teeth be the longest. Euen and leuel-ranged teeth, be either in both chaws alike, as in an horse; or els they be wanting before in the vpper chaw, as in Kine, Buls, Oxen, Sheep, & all such as chew cud. Goats haue none aboue but the 2 foreteeth. None haue gabbed tusks standing forth of the mouth, whose teeth are fashioned like a saw. The females of them that haue those fangs & tusks, if haply they haue the like (for seldome they are seen with such) make no offensiue vse of them at all: for whereas the Bores do strike with them, the Sowes only do but bite. No horned beasts hath such tuskes: But all those haue hollow teeth, wheras in all the rest, they be sound & solid. All fishes be toothed like saws, saue only the guilt-head Scarus; for this only of all creatures liuing within the water, hath an euen course of teeth. Furthermore, many fishes be found to haue their mouth, yea and their tongue, couered and beset all ouer with teeth: to the end, that by the means of many wounds (as it were) they might make soft their meat, which otherwise they could not possibly chew and teare. In many the teeth stand in the pallat and roofe of their mouth, yea and in their very taile. Moreouer, some there be that haue them crooking inwardly to the mouth, that the meat might not fall out againe: as hauing no other means to hold it in. Also, the Aspides, and Serpents are likewise toothed, but they haue aboue, both on the right side & the left, two teeth that be very long, and those are hollowed within after the maner of smal pipes, like to the stings of Scorpions, by which they discharge their phison. The best writers who haue searched most curiously into the secrets of Nature, do hold, That the venome of Serpents is nought els but their gal; and that by certain veins vnder their ridge bone, the same passeth along to the mouth. Some say, that a Serpent hath but one venomous tooth; which because it is crooked, therefore he turneth and bendeth it vpright when he would sting or bite withall. Others affirme, that at such a time the same falls out, and a new commeth vp again and groweth in the place: for casie it is to be driuen or shaken out: and we see some of them handled and carried in mens bosomes, without that tooth. It is said moreouer, that the Scorpions haue the like tooth in their taile, and most of them three together. Vipers teeth are couered and lie hidden within their gumbs. This Serpent being full of poiton, redoubleth her pricke, and at euery bit letteth in poison into the wound. No flying foule hath teeth, saue only the Bat or winged-mouse. Of all creatures which beare no hornes, the Camell onely hath no fore-teeth in the vpper chaw. Such as be horned, haue no saw-teeth. Snailes likewise haue teeth: witnesse the leaues and tendrils of vines, which the very least of them all do gnaw and eat away. But for sea-fishes, that those which liue in shels or be gristly, should haue their foreteeth; and namely, that the sea-Vrchins 5 apiece; I cannot but wonder how men could come by the knowledge. Insects in stead of teeth, haue a sharp pricke to sting withal. Apes haue teeth euen as men. An Elephant hath foure teeth within to chew with (besides those that stand out) which in the males turne and bend vpward, but in the female they are streight, & shut directly downward. The fish also called Musculus Marinus, which goeth before the Whale or Whirlpoole as his guid, hath no teeth at all; but in stead thereof, his mouth all within, his tongue also and pallat, is rough againe with certaine bristles. The lesse four-footed land-beasts, haue the two fore teeth of either side, longer than the rest. As for all other creatures, they bring their teeth with them into the world: man only is born without them, and at the 7 moneth they commonly breed. In all other creatures they continue still and stick fast; except Men, Lions, Horses, Mules, Asses, Dogs, and such as chew cud, for these change their teeth: but Lions and dogs cast only the eie-teeth, called *Canini* in Latine. The eie-tooth of a Wolfe (so it grow on the right side of the head) is thought to doe strange matters. The great grinders which stand beyond the Eye-teeth, in no creature whatsoeuer doe fall

The Teeth.

out of themselues. As for the farthest cheek-teeth in a mans head, which be called *Genuini*, [*i.* the Wit-teeth] they come about the time that he is 20 yeares old, and in many at 80 yeares of age. Sure it is, that those teeth fall from women in their old age, and foone after come againe: such women I meane, as had no children in their youth. And *Mutianus* hath reported, That hee saw one *Zancles* a citizen of Samothrace, who had new teeth comming vp after he was an 104 yeares old. Moreouer, males ordinarily haue more teeth than the females: as we may see in mankind, Sheep, goats, and Swine. *Timarchus* the son of *Nicocles* the Paphian, had a double course of teeth in either jaw. He had a brother also who neuer cast his foreteeth, and therefore hee wore them before to the very stumps. We reade in Chronicles of one man that had a tooth growing out of the very pallat of his mouth. As for the eye-teeth, if they be lost by any mischance, there neuer grow again any other for them. In horses only, of all other creatures, teeth wax whiter by age: for in the rest, they turne to be browne and reddish. The age of Horses, Asses, and Mules, is knowne by a marke in the teeth: a horse hath in all 40. At the end of 30 moneths, hee loseth his fore teeth of either chaw, as well aboue, as beneath: the yere following as many, euen those that be next, namely at what time as they put out those which be called the cheeke teeth. At the beginning of the fifth yere, he loseth other two, but there come vp new in the place in the sixth yere. By the seuenth yere he hath all, as well those that should come in others place, as those which are firme and neuer change. A guelding neuer casts his teeth, no not his sucking teeth, in case he were guelded before. Asses in like manner begin to shed their teeth at the 30 moneth of their age; and so forward from 6 moneths to 6 moneths: and if they fole not before they haue shed their last teeth, they are for certaine to be holden barren. Kine and Oxen, when they be two yeres old, do change their teeth. Hogs or Swine neuer haue any teeth to fall. Now when as these marks are gon out, which shew the Age of Horses, Asses, and such like, yee must (to know their age) go by the ouergrowth & standing out of the teeth, the greinesse of the haire ouer their brows, and the hollow pits thereabout: for then are they supposed to be 16 yeares of age. As touching men, some are thought to haue venome and poison in their teeth: insomuch, as they be shewed bare and naked against a cleare mirror or looking glasse, they wil dimme the beauty thereof, yea, and kill yong pigeons whiles they be calow and vnplumed. But forasmuch as we haue spoken sufficiently of teeth, in our treatise as touching the generation of Man, wee will passe ouer the rest, and proceed vnto other parts; saue onely that this is to be obserued and noted, How children be sicke when they be about breeding of their teeth. And to conclude, of all other creatures, those are most dangerous with their Teeth, which haue them framed like sawes, and closing one betweene another.

The Tongue. Now as concerning Tongues, we obserue much diuersitie in them: for all creatures are not tongued alike. First and formost, Serpents haue very thin tongues, and the same three-forked; blacke of colour, shaking, and ready to pierce; and if a man take them forth, very long. Lizards haue tongues two-forked and full of haires: so haue the Seales or Sea calues a double tongue: but the tongues of these beforenamed, are as small as haires: as for the rest, their tongues serue them to licke their muffles and lips all about. Fishes haue their tongues for the greater part therof, cleauing fast to their pallat; and in Crocodiles they are so, clean throughout. But as wel fishes as other creatures of the water, haue a fleshy palat, which serues them in stead of a tongue to tast withall. Lions, Libards, and all of that sort, yea and Cats, haue their tongues rough and vneuen, made like a file with many small edges lapping one ouer another: in such sort, as that with licking it wil weare the skin of a man so thin, that their spittle and moisture when it commeth neare vnto the bloud and the quick, will driue oftentimes into rage and madnesse, those whom they so licke, yea although otherwise they be made tame and gentle to come to hand. As touching the tongues of Purple fishes we haue written already. Frogs haue their tongues in the forepart fast to the mouth: the hinder part within toward their throat, is free and at liberty, whereby they keep that croking which we heare at one season of the yeare; namely, when the males cal to the femals for to ingender; & then they be called Olalygones: for at that time they let down their nether lip somwhat vnder the water, that they gargle with their tongue leuell to the water, which they receiued into their throat: and so while their tongue quauereth withall they make that croking noise aboue said: he that would looke then aduisedly vpon them, should see their specks so swoln and stretched out full, that they will shine againe: he should perceiue, their eies ardent and fierie with paines that they take thus with the water. Those creatures that haue

A haue pricks and stings in their hin-parts, are furnished also with tongue and teeth. As for Bees, their tongue is very long; and the Grashoppers put it forth a good way. They that haue a fistulous sting or pricke in their mouth, are prouided neither of teeth nor tongue. In some Insects, (as namely Pismires) the tongue lieth close within. Elephants, aboue all other beasts, haue a large and broad tongue. All creatures haue their tongue loose and at libertie at all times, each one in their kind: man only is oftentimes so tongue-tied, that needful it is to cut certain strings and veines for to ease it. *Metellus* the high priest and chiefe sacrificer at Rome, had such a stutting and stammering tongue (by report) that against he should dedicate the temple of the goddesse *Opifera*, he labored so with his tongue for vtterance, for certaine moneths together, & took such pains, as if he had bin vpon the racke. All children, by that time that they be seuen yeares
B old at the farthest, speake readily, so as they be not by some vnnaturall cause impeached. But some men there be, which haue their tongues so at commandement, and so artificially they can handle it and their throat together, that they are able to counterfeit the singing of all birds, and the voice of any other creature, that one cannot know and discerne them asunder. As touching Taste, which is the judgement of meats and drinks, to wit, What smack and tallage they haue? all other liuing creatures find it at the tip of their tongue only: but man tasteth as wel with the pallat or roofe of his mouth. The spungeous kernels, which in men be called Tonsillæ, or the Almands, are in swine named the Glandules. That which betweene them hangeth downe from the inmost part and roofe of the mouth, by the name of the Vvula, is to be found in man onely.

Vnder it, there is a little tongue (which the Greekes call Epiglossis) at the root of the other:
C and the same is not to be found in any creature that laieth egs. A twofold vse it hath, lying as it doth between the two pipes. Whereof, that which beareth more outward, and is called The rough Arterie, or the Windpipe, reacheth vnto the lungs and heart. And as a man doth eat and swallow downe his meat, this foresaid little flap doth couer it, for feare left as the spirit, breath, and voice passeth that way, the meat or drink (if it should go wrong to the other conduit or passage) might indanger a manand put him to great trouble. The other is more inward, called properly the Gullet, or the Wezand, by which we swallow down both meat and drink, and it goeth to the stomacke first, and so to the belly. This also the said flap doth couer by turns, to wit, as a man doth either speake or draw his breath, lest that which is already passed into the stomacke, should come vp againe, or be cast vp vnseasonably, and thereby impeach a man in his speech: the
D Windpipe consisteth of a gristly and fleshie tunicle: the Wezand of a membranous or sinewie substance and flesh together.

The flap Epiglossis.

The Windepipe, and Wezand pipe.

There is no creature hauing a necke indeed, but it hath also both these pipes. Wel may they haue a gorge or throat, in whom there is found but the gullet only: but nape of neck behind, they can haue none. As for those vpon whom Nature hath bestowed a neck, they may with ease turn their head about too and fro euery way, to looke about them, because it is composed of many spondyles, or turning round bones, tied and fastened one vnto another by ioints and knots. The Lion only, together with the Wolfe, and the Hyæna, haue this necke bone of one entire and straight peece, and therefore stiffe that it cannot turne. Otherwise it is annexed to the chine, and the chine to the loines.

The Necke.

E This Chine likewise is a bony substance, but made round and long, and fistulous within, to giue passage to the marrow of the backe, which descendeth from the brain. Learned men are of opinion, That this marrow is of the same nature that the braine is: and they ground vpon this experience, That if the thin and tender skin that inclooseth it be cut through, a man cannot possibly liue, but dieth immediatly. All creatures that be long legged, haue likewise in proportion as long necks. So haue also water-fouls, although their legs be but short. But contrariwise, yee shall not see any birds with long necks, that haue hooked tallons. Men onely and Swine, are troubled with the swelling bunch in their throats: which many times is occasioned by corrupt water that they drinke. The vpper part or top of the Wezand, is called the Gorge, or the gullet:
F the nether part or the extremitie thereof, is the Stomacke. There is another fleshie concauitie of this name, vnder the windpipe, annexed to the chine-bone: long it is and wide, made in fashion of a bottle, flagon or rather a gourd. Those that haue no gullet, are also without a stomack, a necke, and a wezand, as fishes: for their mouths and bellies meet. The sea Tortoise hath neither tongue nor teeth: with the edge of his muffle (so sharpe it is) he is able well enough to chew all his victuals.

The Chine-bone.

The Stomack. Vnder the Arterie or wind-pipe, is the mouth of the ſtomacke; of a callous or griſtly ſub- G
ſtance, thicke toothed, with prickles in manner or a bramble, for the better diſpatching of the
meat: and theſe notches or plaits grow ſmaller and ſmaller, as they approch neerer to the belly:
ſo as the vtmoſt roughneſſe thereof in the end is like vnto a Smiths file.

The Heart. Now are we come to the Heart, which in all other liuing creatures is ſcituate in the very
midſt of the breſt: in man only it lies beneath the left pap, made in maner of a peare, & with the
pointed and ſmaller end beareth out forward. Fiſhes alone haue it lying with the point vpward,
to the mouth. It is generally receiued and held, that it is the firſt principall part which is for-
med in the mothers wombe: next vnto it the braine, and the eies laſt of all. And as theſe be the
firſt that die, ſo the Heart is laſt. In it (no doubt) is the moſt plenty of heat, which is the cauſe
of life. Surely it euer moueth and panteth, like as it were another liuing creature by it ſelfe: co- H
uered it is within-forth with a very ſoft, yet a ſtrong tunicle, that enwrappeth it: defended it is
beſides with a ſtrong mure of ribs, and the breſt bone together: as being it ſelfe the principall
fortreſſe and caſtle, which giues life to all the reſt. It contains within it certaine ventricles and
hollow receits, as the chiefe lodgings of the life, and bloud, which is the treaſure of life. Theſe
in greater beaſts are 3 in number: & none there is without two. This is the very ſeat of the mind
and ſoule. From this fountain there do iſſue 2 great veſſels, maſter-veins or arteries, which are
diuided into branches: & being ſpred as wel to the fore-part as the back parts of the body, into
ſmaller veins, do miniſter vitall bloud to all the members of the body. This is the only princi-
pall part of the body that cannot abide to be ſick, or languiſh with any infirmity: this lingereth
not in continuall pain: no ſooner is it offended, but death inſueth preſently. When all other I
parts are corrupt and dead, the Heart alone continueth aliue. All liuing creatures that haue an
hard & ſtiffe heart, are ſuppoſed to be brutiſh: thoſe that haue ſmall Hearts, be taken for hardy
and valiant: contrariwiſe, they are reputed for timorous and fearfull, which haue great Hearts.
And the biggeſt Heart, in proportion of the body, haue Mice, Hares, Aſſes, Deere, Panthers,
Weaſels, Hyænes; & in one word, all creatures either by nature fearefull, or vpon feare hurtful.
In Paphlagonia, Partridges haue two Hearts. In the Hearts of Horſes, Kine, Buls and Oxen, are
otherwhiles bones found. The Heart in a man groweth yerely two drams in weight, vntill it be
50 yeares of age: and from that time forward it decreaſeth from yere to yere as much: whereup-
on he is not able to liue aboue 100 yeares, for want of Heart: as the Ægyptians be of opinion;
whoſe manner is to preſerue the dead bodies of men ſpiced and embalmed. It is reported of K
ſome men, that they haue hearts all hairy: and thoſe are held to be exceeding ſtrong and valo-
* In three ſun- rous. Such was *Ariſtomenes* the Meſſenian, who flew with his owne hands * 300 Lacedæmoni-
dry battels. ans. Himſelfe being ſore wounded and taken priſoner, ſaued his owne life once, and made an e-
ſcape out of the caue of a ſtone quarrie, where he was kept as in a priſon: for hee got forth by
narrow Fox-holes vnder the ground. Being caught a ſecond time, whiles his keepers were faſt a-
ſleep, he rolled himſelfe to the fire, bound as he was, and ſo without regard of his owne bodie,
burnt in ſunder the bonds wherewith he was tied. And at the third taking, the Lacedæmonians
cauſed his breſt to be cut and opened, becauſe they would ſee what kind of Heart hee had: and
there they found it all ouergrown with hair. Moreouer, this is obſerued in peruſing the inwards
of beaſts, That when they be wel liking, and do preſage good, the Heart hath a kind of fat in the L
vtmoſt tip thereof: howbeit, this would be noted, That according to the Soothſaiers learning,
their Heart is not alwaies taken for a part of the bowels or intrails: for after the 123 Olympias
when *Pyrrhus* king of Epyrus was departed out of Italy, what time as *L. Poſthumius Albinus* was
king ſacrificer at Rome, the Soothſaiers and Wiſards began firſt to look into the heart, among
other inwards. That very day when as *Cæſar* Dictator went firſt abroad in his roiall purple robe,
and tooke his ſeat in the golden chaire of eſtate, he killed two beaſts for ſacrifice, & in both of
them the intrailes were found without any Heart: whereupon aroſe a great queſtion and contro-
uerſie among the Augures and Soothſaiers, How it could be, that any beaſt ordained for ſacri-
fice ſhould liue without that principall part of life? or whether poſſibly it might loſe it for that
preſent only? Ouer and beſides, it is held for certaine, that if any dye of the trembling and ache
of the heart, or otherwiſe of poiſon, their heart will not burne in the fire. And verily, an Oration M
there is extant of *Vitellius*, wherein he challengeth *Piſo*, and chargeth him directly with Poyſo-
ning of *Germanicus Cæſar*, vpon this preſumption; for he openly proteſted and prooued, That the
heart of *Germanicus* would not conſume in the funerall fire, by reaſon of poyſon. But contra-
riwiſe,

A riwiſe, *Piſo* alledged in his own defence the foreſaid diſeaſe of the Heart, called Cardiaca, wher-
of as he ſaid *Germanicus* died.

Vnder the Heart lie the Lights, which is the very ſeat of breathing: whereby we draw and *The Lights or Lungs.*
deliuer our wind. For which purpoſe, ſpungeous it is and ful of hollow pipes within. Few fiſhes,
as we ſaid before, haue any Lungs: other creatures alſo that lay egs, haue but ſmal, and the ſame
full of froth, and without bloud: wherupon they be not thirſty at all: which is the cauſe likewiſe
that Seales and Frogs can diue ſo long vnder the water. The Tortoiſe alſo, albeit he haue very
large Lungs, and the ſame vnder his ſhell, yet there is no bloud therein. And verily, the leſſer
that the lungs be, the ſwifter is the body that hath them. The Chamæleons lights be very big,
for the proportion of his body, for little or nothing els hath he within it.

Next followeth the liuer, which lies on the right ſide. In that which is called the head of the *The Liuer.*
B Liuer, much varietie and difference there is. For a little before the death of *Marcellus* (who was
ſlaine by *Annibal*) as he ſacrificed, there was found a Liuer in the beaſt, without that head or fi-
bres aforeſaid: and the next day after, when he killed another for ſacrifice, it was ſeen with two.
When *C. Marius* ſacrificed at Vtica, the ſame was likewiſe wanting in the beaſt, being opened.
Semblably, when prince *C. Caligula* the Emperor ſacrificed vpon the firſt day of Ianuarie, at his
entrance into the Conſulſhip, the Liuer head was miſſing: but ſee what followed! in that yeare
his hap was to be ſlain. Moreouer, his ſucceſſor *Claudius* within a month before he died by poi-
ſon, met with the like accident in his ſacrifice. But *Auguſtus Cæſar*, late Emperor of famous me-
mory, as he killed beaſts for ſacrifice, the very firſt day that he entred vpon his imperiall digni-
C ty, found in 6 of them 6 liuers, which were all redoubled & folded inward, from the nethermoſt
lobe or skirt beneath: wherupon anſwer was made by the Soothſayers, That within one yere he
ſhould double his power and authority. The foreſaid head of the Liuer, if it chance to be ſlit or
cut, preſageth ſome euill hap, vnleſſe it be in caſe of feare and penſiueneſſe: for then it betoke-
neth good iſſue, and an end of care and ſorrow. About the mountaine Briletum and Tharne;
alſo in Cherſoneſus neere vnto Propontis, all the Hares ordinarily haue two Liuers: and (a
wonderous thing it is to tell) if they be brought into other countries, one of the ſaid Liuers
they looſe.

Faſt to the Liuer hangeth the Gall; yet all creatures haue it not. And about Chalcis in Eu- *The Gall.*
D bœa, the ſheep are quite without Gall. But in Naxus they all haue two Gals, and the ſame very
big. The ſtrangers that come into both thoſe parts, think the one as prodigious & monſtrous
as the other. Horſes, Mules, Aſſes, Deere both red and fallow, Roe-bucks, Swine, Cammels, and
Dolphins haue no Gall. Some Mice and Rats there be which haue it. And few men there are
without, howbeit, ſuch are of a ſtronger conſtitution, more healthfull, & longer liued. Howbeit
ſome are of opinion, That all horſes haue Gall, not annexed to their liuer, but within their bel-
lie: and as for the Deere aboue ſaid, it lieth (as they think) either in their taile, or els their guts;
which (by their ſaying) are ſo bitter, that hounds and dogs by their good wils would not touch
them. Now this Gal is nothing els but an excrement purged from the worſt bloud: & therefore
bloud is taken to be the matter thereof. Certain this is, that no creatures haue Liuers, but ſuch
as likewiſe haue bloud. And in truth, the Liuer receiueth bloud from the heart, vnto which it is
E adioined, and ſo conueigheth and deſtributeth it into the veins. Black choler lying in the Li-
uer cauſeth fury and madneſſe in man: but if it be all caſt vp by vomit, it is preſent death: here-
upon it commeth, that we terme furious and raging perſons by the name of cholericke, or full
of Gall: ſo great is the venome of this one part, if it reach once to the ſeat of the mind, and poſ-
ſeſſe it. Nay more than that, if it be ſpred and diſperſed ouer all parts of the body, it infecteth
it with the yellow jaundice, yea, and coloureth the very eies, as it were with Saffron. Let it out
of the bladder or bag wherin it is, ye ſhal ſee it ſtain veſſels of braſſe, yea, they wil become black
againe, and loſe their brightneſſe if they be touched therewith. No maruell then if the venome
and poiſon of ſerpents, proceed from the Gall. They that vſe to feed of wormie wood, growing
in Pontus, commonly haue no gall. Rauens, Quailes, and Feaſants, haue their gall ioining to
F their kidnies, or rather to their guts, of one ſide and no more: and ſome to the guts only, as Pi-
geons, Haukes, and Lampreies. Few birds there be that haue gall in the Liuer. As for Serpents
and Fiſhes, they haue the greateſt gals of all others, for the proportion of their bodies. Moſt of
them haue their gall along their guts throughout, in manner of the Hauke and the Kite. More-
ouer, in all Whale fiſhes their gall is faſtened to the liuer: and ſo, we ſee it lieth in the Seales,

whose Gall is singular good for many purposes. Oxe Gall in limming giueth a golden colour: G
The Soothsaiers haue dedicated it to *Neptune*, & the mighty power of water. *Augustus* the Emperor found two Galls in a beast that he killed for sacrifice, vpon that very day whereon he obtained that famous victorie at Actium. Some say, that the lobes or fibres in the smal Liuers of certaine Mice and Rats, are commonly found to be as many as the Moone is daies old in euery moneth: and looke how many daies you reckon of her light, so many may you count the fibres aforesaid. Also, that their liuer groweth at mid-winter, when daies be at shortest. In the kingdomes of Grenada and Andalusia in Spaine, Connies are many times found with double Liuers. The land Frogs of Toads kind, haue one lop or lappet of the liuer, which Ants will not touch; because of the poison therein, as is supposed. Liuer of all things may be kept and preserued longest: and we reade in chronicles, that there haue bin found in some cities long besieged, H
Liuers in salt or pouder, which had continued a 100 yeres. Serpents and Lizards haue long Liuers. In that sacrifice which *Cæsina Volaterranus* killed, Dragons were seen to issue from among the Entrails and the Liuer; and this turned to be a lucky presage. And verily, why should wee think this report or any other in sacrifices, to be incredible? considering that vpon the very day that K. *Pyrrhus* was slain, the heads of the beasts being slain for sacrifice (notwithstanding they were cut off from the bodies) moued forward vpon the ground, and licked vp their owne bloud.

The Midriffe The vpmost inwards of a man, to wit, the Heart and Lungs, are diuided from the other entrails beneath, by certain pellicles or rims of the Midriffe, which the Latines call Prœcordia, I
(because they are drawne and set before the Heart as a defence:) and the Greeks Phrenes: true it is, that Nature in great prouidence hath inclosed all the noble and principal parts within seuerall skins and coats of their owne, which might serue in stead of sheathes and cases for their better defence: but in this partition of the Midriffe, shee had a more particular regard to the propinquitie of the Stomack and Belly, left that the vitall parts being so neare, should be oppressed and suffocated with the streams and vapors of the meat therin boiling. To this parr are we beholden for our quick wit, this membrane of the Midriffe we may thank for our ready conceit and vnderstanding: to which effect, charged it is with no flesh, but composed of fine & subtile sinews. The same likewise is the very especiall feat of mirth: as we may perceiue euidently by tickling vnder our armeholes, vnto which it reacheth: and as in no place of mans body the K
skin is more fine and tender, so it taketh as great pleasure to be tickled and lightly scratched there. And herupon it is, that in solemne combats of sword-fencers at vtterance with the sharp, as also in field battels, we haue many a time seen men wounded and thrust through the Midriffe, to die laughing.

The Bellie or Paunch, with the Guts. To proceed in our Anatomy, all creatures hauing a Stomack or Read, are not without a belly vnder it. As many as chew cud, haue the same * double or two fold, the rest one and no more: and looke who want bloud, are without it also. For some there be that haue one entire gut, that
**Aristotle* saith foure fold, beginneth at the mouth, and by a certaine way redoubleth and returneth backe againe thither, and namely, the Cuttill and the Polype. In man it is annexed to the bottome of the Stomack, like as in a Dog. And in these twaine onely, narrower it is in the lower part: which is the cause that none but they do vomit; for when their bellies be full, the streight passage beneath keepes L
the meat from descending, and so it returneth vpward: which cannot happen to them that haue it wide and large, whereby the meat is sooner sent downe into the guts beneath. Next to the bag of the Stomack, men and sheep haue the small guts called Lactes, through which the meat passeth: in others it is named Ile. Next vnto which are the greater guts, that reach into the Paunch: and in man they are full of windings and turnings: which is the reason, that as many as haue a great space between the Stomacke and the Paunch, are more hungry and greedy of meat than others. And those who haue the fattest and most greasiest bellies, most commonly are the grossest of capacity and vnderstanding. Some fouls likewise haue a two-fold receptacle for their meat: the one is the gizzer, craw, or gorge, wherein they bestow at the first their meat when they take it new: the other is the true stomacke indeed; into which they send out of the former, the victuals already altered, prepared, and in good forwardnes of concoction. And such M
be Hens and Pullein, Coists or Stock-doues, House-doues, or Pigeons, and Partridges. All the rest in manner want the said gizzer, but in stead thereof haue a wider gorge, where-through the meat passeth into the stomack, as Choughes, Rauens, and Crowes. Some againe there bee that haue

A haue neither one nor other, but be far different from the rest, and these haue their bellie hard to their gorge: and especially such as haue long neckes and narrow, as the bird Porphyrio. The paunch or bellie of those beasts which are whole houfed, is hard and rough. And in land beasts, it is in some thicke toothed, and set full of sharp pricks: in others it is framed rugged likewise, plaited crosse in manner of lattice, readie to catch and bite whatsoeuer. Those which haue not teeth in both chawes, nor yet chew cud, do in this bellie concoct and digest their victuals, and out of it they send the meat into the paunch where the guts lie. This member, in the mids, is in all creatures fastened to the nauill: and in man it is like vnto that of a swine, hauing toward the neather part, a great gut named Colon: and this is it, which giues occasion to the intollerable
B paine of the colique. This Gut in dogs, is very streight and narrow, whereupon they haue much adoe to discharge it, and lightly they doe not skummer, but with great paine and difficultie. Those creatures of all others be counted most vnsatiable, whose meat passes immediatly out of their bellie into the straight gut Longaon, or the Tiwill: as among foure-footed beasts, the Wolfe, engendred betweene the Hind and a hee-Wolfe: and in foules, the Cormorant. An Elephant hath foure bellies or paunches: all other parts within, be answerable to those in Swine. Their lungs be foure times as big as those in an Oxe. The gorge or craw, and the stomacke or gizier in birds, is the thicke and fleshie. In the maw or stomack of Swallows young birds, there be some certaine little white stones, or else of a reddish colour, called thereupon Chelidonij: and they be in great request in Art-Magicke, namely for charmes and enchantments. Likewise in the second bellie or paunch of yong Heifers, there is found a small, black, and grauelly stone round as a bal, and light withall: a singular remedie (as it is thought) for women that haue hard
C labour and be deliuered with much paine & difficultie, so it be taken before that euer it touch *The Cawle or Kell.* the ground. The Stomacke and the Guts, are kept within a fat and thin cawle, in all creatures but those that lay egs.

Vnto this Cawle, is fastened the Spleene on the left side of the belly just against the liuer. *The Splene.* And otherwhiles these two shift their places, and one lies where the other should; but that is euer held as a prodigious token. Some are of opinon, that those creatures which lay egs haue a Splene, but it is very smal: as also the Serpents. And surely such an one appeares plainely in the Tortoise, Crocodile, Lizards, and Frogs. Certaine it is, that the bird Ægocephalus hath none at all, no more than others that want bloud. This member hath a propertie by it self somtimes,
D To hinder a mans running: whereupon professed runners in the race that be troubled with the splene, haue a deuise to burne and wast it with an hot yron. And no maruell: for why? they say that the Splene may be taken out of the bodie by way of incision, and yet the creature liue neuertheless: but if it be man or woman that is thus cut for the Splene, hee or shee loseth their laughing by the means. For sure it is, that vntemperate laughers haue alwaies great Splenes. In Scepsis (a countrey of Asia) the sheep haue very small Splenes, and from them were deuised the remedies to cure the disease thereof, and to wast their excessiue greatnesse.

But about Briletum and Tharne (the hils abouenamed) the Deer haue foure Kidnies apeece: *Kidnies.* whereas on the contrarie side, neither feathered fowle nor skalie fish, haue any. Moreouer, the Kidnies sticke close vnto the bones. The right Kidney in all creatures is the bigger, lesse fat,
E dryer of the twaine: howbeit in both of them, there is a fat issueth out of the mids, saue only in Seales. All liuing creatures are fatteſt about the raines of the backe: and sheepe may be so far ouergrowne with fat, that they will die thereof. Somtime there be little stones found within them. Al four-footed beasts that bring forth their yong quick, haue kidnies. And of such as lay egs, the Tortoise alone, which also hath all other entrails. The Kidnies of a man, be like to those of Kine and Oxen, as if they were composed of many together.

Nature hath embarred the Breast-parr (wherin lie the vitall members) with ribs round about: *Breſt & ribs.* but toward the belly (which needs must grow and stretch) she hath not so done, but hath giuen it liberti: for no liuing creature hath bones to compasse the panch. Mans Breast only is broad and square: in all others it is framed otherwise, like the keele of a ship: which is more euident-
F ly to be seene in birds and in water-fowles most of all others. As for Ribs, man only hath eight that be full and whole: Swine haue ten: horned beasts thirtene: Serpents thirtie.

Vnder the belly and paunch in the fore- part of the bodie, hangeth the bladder: which no *The Bladder.* creature laying egs hath, saue only the Tortoise. It is found in none but such as haue a paire of lungs, and the same with bloud: neither in any creeping creature without feet. Betweene it and the

the belly be certaine canals or arteries, reaching to the groine, which by the Greeks are named *Ilia* [*i.* the Flanks.] In the bladder of a Wolfe, is found a little ſtone called Syrites. But in ſome mens bladders, ye ſhall ſee otherwhiles certaine groſſe haires to engender, like to briſtles; alſo grauell and ſtones, which put them to intollerable paine. This bladder conſiſteth of a certaine tunicle or skin, which if it be once wounded, cannot again be conſolidated; no more than thoſe fine pellicles or rinds that enwrap the braine and the heart. For you muſt thinke, that there be many ſorts of theſe membranes or filmes ſeruing to ſundrie vſes.

The Matrix. As for women, their inward parts are anſwerable to mens in all theſe reſpects aboueſaid: and beſides, they haue by themſelues adioyning cloſe vnto the bladder, another little bag or purſe; whereupon it is called in Latine *Vterus*: and it hath another name beſide, to wit, *Locus*; which we call the Matrice, the Mother, or the Wombe: and in other creatures it is tearmed *Vulua*. In Vipers, and ſuch as hatch their egs within them it is double. In thoſe that lay eggs, it lyeth faſt to the Midriffe. In women, it hath of either ſide two chombers or concauities. If at any time it chance to be peruerted and turned the wrong way, or take aire into it, it is deadly, and riſeth vp to ſtop the wind. If Kine be with Calfe, men ſay, they carrie not their yong but in the right cell or receptacle thereof, yea, although they goe with two Calues at once. Our fine-toothed gluttons do find a better taſt in a Sows wombe that ſlips and caſts her Pigs and it together, or is cut out of her belly, than if the dam bringeth forth her fruit at ful time. The one forſooth is called Ejecticia, the other, Porcaria. And the beſt is that of a yong Sow that neuer farrowed before: and contrariwiſe, of old Sows and ſuch as haue giuen ouer to farrow. After ſhe hath pigged, vnleſſe ſhe be killed the ſame day, the ſame hath a dead color, and is but leane. And yet that of a young Swine is not greatly commended, vnleſſe it be of her firſt Pigs. Howbeit, thoſe of old Sowes alſo be in requeſt, ſo they haue not giuen ouer breeding: and namely, if they be taken either within two daies before they ſhould pig, or within two daies after they haue pigged, or at leaſt wiſe, the very ſame day. The next to the caſt-wombe aboueſaid, is that of a Sow killed a day after ſhe hath pigged. The paps and teats of ſuch a Sow, newly hauing farrowed, is counted excellent good meat, ſo that it be taken before euer the Pigs ſucked them drie: but thoſe of a Sow which hath caſt her pigs before time, is held for the worſt of all. In old time they called this morcell in Latine *Abdomen*, and before it was growne hard and brawnie, they neuer were wont willingly and wittingly to kil Sowes, * euen vpon the point of their farrowing, and being readie to Pig [as our monſtrous gluttons doe now adaies, becauſe they would haue the teats ſoft, tender, and full of milke.]

* *Incientes.*

Tallow and greaſe. All horned beaſts hauing teeth growing but in one jaw, and paſterne bones about their feet, do beare tallow or ſewet, and feed fat. Thoſe that be clouen-footed, or otherwiſe haue feet deuided into many toes, and beare no horns; haue no tallow, but greaſe or fat. The tallow or ſewet growes to be hard, and when it is thoroughly cold, is brittle and apt to crumble and breake; and is euer found in the edge and extremities of the fleſh: contrariwiſe, the ſeam or greaſe is enterlarded betweene the fleſh and the skin; liquid it is, and eaſie to melt. Some creatures there bee that will neuer be fat, as the Hare and Partridge. Generally, whatſoeuer is barren, be it male or female, will ſoone feed fat. Sooner grow they to be old which are ouer-fat. No liuing creatures there are but haue a certain fat in their eies: & the tallow in any thing whatſoeuer, is ſenſleſſe: for neither hath it Arteries nor Veines. The fat alſo & greaſe in moſt of them, is without ſence. And hereupon it is, That ſome affirme, how Mice and Rats haue gnawne and eaten fat Hogs whiles they were aliue, and made them neſts in their backs: yea, and *Lucius Apronius* ſomtimes Conſull, had a ſonne ſo fat that he could not goe, ſo heauie was he loden with greaſe; inſomuch, as he was faine to take ſome of his greaſe forth of the bodie, and ſo diſcharge himſelfe and become lighter.

Marrow. Marrow ſeemeth to be much of the ſame natnre: in youth it is red, and in age waxeth white. This is neuer found but in hollow bones: and yet not in the legs of Horſe, Aſſe, Mule, or Dog. And therefore if they chance to be broken, they will not ſowder and vnite againe, which happens when the Marrow runs out to the place of the fracture. In thoſe that carrie greaſe or ſewet, fattie it is and greaſie: but in horned beaſts it reſembles Tallow. Sinewie it is, and that onely in the ridge of the backe of as many as haue no bones, as namely, in all fiſhes. Beares haue none at al. A Lion likewiſe hath but very little, to wit, in ſome few bones of his thighes & buts behind, and alſo of his legs before vnder his ſhoulders. For his other bones are ſo hard, that they will ſtrike

ſtrike fire, as it were an hard flint. The Marrow is hard in them that gather no greaſe, but rather tallow.

Bones and Griſtles. The bones of Aſſe legs are good to ſound ſhrill, and to make pipes of. Dolphins haue verie bones, and not prickie chines: for they bring forth their yong aliue. Serpents haue only prickie ridges. Fiſhes that be ſoft haue no bones: but their bodie is bound with certaine hoopes or circles of fleſh, as the Cuttill or Calamarie. Neither haue Inſects any bones at all. Thoſe fiſhes which be not ſoft, but griſtly, haue a kind of marrow in their ridge bone. Scales haue griſtle, and no bone. The eares and noſethrils of all creatures, if they beare vp but a little, haue a ſoft tender griſtle apt to bend and wind: ſuch is the goodneſſe of Nature, prouiding that they ſhould not breake. A griſtle if it be broken, will not cloſe together and be ſound. Neither will bones, if ought be cut from them, grow againe: vnleſſe it be in horſes and ſuch beaſts of carriage, and namely, betweene the houſe and the paſternes.

Growth. A man Groweth in height and length vntill hee be one and twentie yeares of age: then beginnes he to ſpread and burniſh in ſquareneſſe. As well men as women-kind, ſhute vp moſt and vndoe the knot that hindered their growth, when they are come to fourteene yeares of age, and be vndergrowne: and moſt is this ſeene, if ſome ſickneſſe happen about that time.

Sinues, Cords & Ligaments. As for the Sinewes, Ligaments, and Cords, which take their beginning at the heart, be couered (as it were) with a certain white and glutinous ſubſtance; and the like cauſe and nature they haue. Theſe in all bodies, are tied to the ſlipperie bones: the knitting of the bones together, which be called joints, they faſten and bind together, ſome by comming betweene, others by claſping round about, & others again, by paſſing croſſe ouer: in one place they be twined round, in another broad, according as the figure of each part doth require. Be they cut a two, as they cannot knit againe, ſo they put a man to no paine: pricke or wound them, a wonder to ſee, what extremitie of paine will thereupon enſue. Some creatures be without nerues and ſinewes, as namely fiſhes, for they ſtand much vpon Arteries, and yet ye ſhall haue neither the one nor the other in ſoft fiſhes. Look where there be Sinews, Cords, and Ligaments, thoſe that lie more inward and vnderneath, ſtretch out the part and giue libertie: whreas the vppermoſt that lie ouer them, draw the ſame in as much.

Veines and Arteries. Among theſe are hidden the Arteries, that is to ſay, the paſſages of the ſpirit and life. And ouer them ride the Veines, euen the very conduits and channels that carie the bloud. The Pulſe or beating of Arteries, is moſt euident in the extremities or ends of any members; and for the moſt part bewraies hidden diſeaſes. *Herophilus* that renowmed Poet and interpreter of Phyſick, hath with maruellous skill reduced the order thereof into an art: he hath ſet downe moſt artificially, the certaine meaſures and times, the compaſſe, the metricall lawes thereof, according to euery age: when they ſtrike euen and ſteadie, when too faſt, when too ſlow. But the skill herof is little exerciſed, and his inuention in that behalfe neglected: becauſe it ſeemed ouerwittie, ſubtile, and curious. Howbeit, the obſeruation of the ſtrokes, either comming thick & faſt, or ſlow and ſoftly, giueth a great light to judge of the ſtrength of Nature, that gouerns our life. Arteries want fence, and no maruell, for they be without bloud. Neither do they all containe within them vitall ſpirit. For there haue beene knowne ſome of them cut in twaine, and yet that part of the body only is mortified, which receiued the offence. Birds haue neither Veines nor Arteries. Likewiſe, Serpents, Tortoiſes & Lizards, haue but very little bloud. The Veines diſperſed at the laſt into moſt fine and ſmall threadie fibres vnder all the skin, grow at the length to bee ſo ſlender that the bloud cannot poſſibly paſſe thorough them, nor any thing elſe: saue a thin humor or moiſture, which thorough infinite ſmall pores of the skin doth breath forth, and ſtands there like a dew, and is called Sweat. The place where all the Veines doe meet in a round knot together, is the Nauell.

CHAP. XXXVIII.

¶ *Of Bloud, as well that which ſooneſt waxeth drie, as that which will not thicken at all. Alſo, which is the groſſeſt bloud, and beavieſt, which the lighteſt and thinneſt: and laſt of all, what creatures liuing haue no bloud at all.*

THoſe that haue much bloud, and the ſame fat and groſſe, are angrie and chollericke. The bloud of males is commonly blacker than that of females: yea, and more in youth than in old

old age: and the ſame in the bottome and lower part, ſetleth fatter and groſſer than aboue. In G
bloud conſiſts a great portion and treaſure of life. When it is let out, it caries with it much vi-
tall ſpirit: howbeit, ſenceleſſe it is, and hath no feeling. The ſtrongeſt creatures bee they which
haue the thickeſt bloud: but the wiſeſt, thoſe that haue thinneſt: the more fearefull, that haue
leaſt: but dull and blockiſh altogether which haue none at all. Buls bloud of all other ſooneſt
congealeth and waxeth hard, and therefore poiſon it is, to be drunke eſpecially. The bloud of
Bores, red and fallow Deere, Roe-buckes, and all Buffles, will not thicken. Aſſes bloud is moſt
fatty and groſſe: and contrarily, mans bloud is thinneſt & fineſt. Thoſe beaſts which haue more
than 4 feet, are bloudleſſe. Thoſe that be fat haue ſmall ſtore of bloud, becauſe it is ſpent in fat-
neſſe. Man only bleeds at the noſe: ſome at one noſthrill alone, others at both: and ſome againe
void bloud downward by the Hemorrhoids. Many there be that caſt vp bloud at certaine times, H
ordinarie, by the mouth: as not long ſince *Macrinus Viſcus*, late pretor of Rome: and vſually eue-
rie yeare *Voluſius Saturninus*, Prouoſt of the citie; who notwithſtanding liued vntill hee was a-
boue foureſcore and ten yeres old. Bloud is the only thing in the body that increaſes preſent-
ly. For ſo we ſee, that beaſts killed for ſacrifice wil bleed moſt freſhly & in greater abundance,
if they dranke a little before. Thoſe creatures that lie hidden in the earth at certaine times, (as
we haue ſaid before) haue no bloud in all that while; vnleſſe it be ſome few, and thoſe very ſmal
drops gathered about their hearts. A wonderfull worke of Nature, that it ſhould be ſo: as alſo
that in a man it ſhould alter and change euer and anon, ſo as it doth vpon euery ſmall occaſion:
and the force and ſtrength thereof varie, not only for defect and want of matter to diſperſe a-
broad, but alſo for euery little motion and paſſion of the minde, as ſhame, anger, and feare. For I
one while it ſheweth pale, another whiles red, more or leſſe, in much varietie of degrees. In caſe
of anger it wil ſhew one color: of ſhame and baſhfulneſſe appearing in another. In feare, doubt-
leſſe it retires and flies backe, in ſuch ſort, as a man knowes not what is become of it: ſo as many
in that fit haue ben ſtabbed and run thorough, and yet bleed not at all one drop: but this ſud-
daine change of colour happens to men only. For in other creatures, which (as we haue ſaid) do
alter their hue, it is an outward colour that they take from the reflection of certain places neer
vnto them, man alone hath this change from within himſelfe. To conclude, all maladies and
death eſpecially, conſume the bloud.

Chap. XXXIX. K

¶ *Whether in Bloud reſteth the ſoueraignetie or no? Alſo of the nature of Skin of Haires, and the Paps.*

SOme meaſure not the fineneſſe of ſpirit and wit by the puritie of bloud: but ſuppoſe that creatures are brutiſh, more or leſſe, according as their Skin is, thicker or thinner: and as the other couertures of their bodie be either groſſe and hard, or thin and tender: as we ſee for example in Oiſters and Tortoiſes. They affirme moreouer, that the thick hide in Kine & Oxen, and the hard briſtles in Swine, impeach the entrance of ſubtile aire and fine ſpirit into their bo-
dies: in ſuch wiſe, that nothing can pierce and paſſe through, which is pure and fine, as it ſhould
be. And hereto they bring men alſo, as a proofe, who are thicke skinned, and more brawnie; for L
to be more groſſe of ſence and vnderſtanding: as who would ſay, that Crocodiles were not ve-
ry wittie and induſtrious, & yet their skin is hard enough. And as for the Riuer-horſe, his hide
is ſo thicke, that thereof jaulines and ſpeares are turned: and yet ſo induſtrious is that beaſt,
that in ſome caſe he is his owne Phyſician, and he hath taught vs to open a veine, and let bloud.
The Elephants skin is ſo tough and hard, that therof be made targuets and ſhields, of ſo good
proofe, that is is impoſſible to pierce them thorough, and yet they are thought to be of all four-
footed beaſts, moſt ingenious and wittie. Wherefore, conclude we may, that the skin it ſelfe is
ſenceleſſe, and hath no fellowſhip at all with the vnderſtanding: and eſpecially that of the head;
and wherſoeuer it is of it ſelfe naked and without fleſh, be ſure (if it be wounded) impoſſible it
is to conſolidate the wound, and namely, in the eie lids and bals of the cheekes. All creatures M
that bring forth their young quicke, are hairie: thoſe that lay egs, haue either feathers, as birds:
skales, as fiſhes: or elſe be couered with ſhels, as Tortoiſes: or laſt of all, haue a plaine skin and
no more, as Serpents. The quils of all feathers be hollow. Cut them, they will grow no more:
plucke them, they will come againe. Inſects flie with thin and brittle pellicles or membranes.

The

A The ſea Swallowes haue them euermore moiſt and drenched in the ſea. As for the Bat, he is a-
fraid to wet them, and therfore flies about houſen, & his wings beſides are diuided into joints.
The haires that grow forth of a thick skin, are commonly hard & groſſe, but euermore thinner
and finer in the females. In horſes and mares they grow at length vpon their mains. Lions alſo
haue them long about their ſhoulders and foreparts. Connics haue long haires about their
cheekes, yea, and within-forth: as alſo in the ſoles of their feet: and ſo hath the Hares, accor-
ding to the opinion of *Trogus*: who thereby collecteth, that hairy men likewiſe are more let-
cherous than other. The hairieſt creature of all other is the Hare. In mankind only there grows
haire about the priuy parts: and whoſoeuer wants it, man or woman, is holden for barren, & not
B apt for generation. Haires in men and women are not all of one ſort: for ſome they bring with
them into the world, others come vp and grow afterwards. Thoſe they haue from their mothers
womb do not lightly fall and ſhed, and leaſt of all in women. Yet ſhal ye haue ſome women to
ſhed the haire of the head, by occaſion of ſicklineſſe: as alſo other women to haue a kinde of
down vpon their face, namely when their monethly fleurs do ſtay vpon them. In ſome men the
later kind of haires, to wit of the beard, &c. wil not come of their own accord without the help
of Art. Four-footed beaſts thed their haire yerely, and haue it grow again. Mens haire of their
heads groweth moſt: and next to it that of their beards: if the haire be cut it grows not again
at the cut end, but ſprings from the root. It growes apace in ſome ſicknęſſes, and moſt of all in
the conſumption of the lungs, and in old age, yea, and vpon the bodies of the dead. In lecherous
C perſons, the haire of their head, browes, and eie-lids, with which they came into the world, doe
fall more early than in others: but thoſe that ſpring afterward grow ſooner again if they be cut
and ſhauen. The wooll and haire that foure footed beaſts do beare is more courſe and thick by
age, but it comes not in ſuch plenty as before. And ſuch haue alwaies their backe well couered
with haire and wooll, but their bellies bare. Of Kine and Ox hides ſodden there is made glew:
but the Bulls hide hath no fellow for that purpoſe. Man only of all males hath euident paps in
his breaſts: other creatures haue little nipples only in ſhew of teats. Neither hath all females
teats in their breſts, but only ſuch as are able to ſuckle their yong: none that lay egs haue paps:
nor any haue milk vnles they bring forth their yong liuing: and yet of all fowles I muſt except
D the Bat alone. As for the ilfauored Scritchowles called Stryges, I think they be but tales that
go of them: namely, That they will giue milk out of their breſts to yong infants. True it is, all
men agree in this, That the manner was in old time to vſe in curſing and execration, the terme
of Strix; but what bird it ſhould be I ſuppoſe no man as yet knoweth.

Chap. XL.

¶ *Notable obſeruations in liuing Creatures as touching their paps.*

SHee Aſſes are much pained with the ache of their vdders, when they haue foled; and there-
fore after ſix moneths they will not giue them any more ſucke: whereas mares doe ſuckle
E their colts a whole yeare almoſt. Thoſe beaſts which be whole hoofed, and haue not aboue
two yong at once, haue all of them two paps and no more, and thoſe in no other place elſe but
between their hinder legs. Such as be clouen footed, and horned likewiſe, haue them in that
place: but Kine haue foure teats; Ewes & Goats but two apiece. Such beaſts as be very fruit-
ful and bring many yong, and likewiſe whoſe feet are parted into toes, theſe haue many nipples
or teat heads all along their belly, diſpoſed and ſet in a double courſe, as namely Sowes; of
which thoſe of the better ſort haue 12; the common ſort but tenne. Alſo Bitches after the
ſame maner. Some beaſts haue 4 teats in the mids of their belly, as Panthers: ſome twain and
no more, as the Lioneſſe. The Elephant alone hath twaine vnder his ſhoulders or legs before,
F and thoſe not euident in the breaſt part, but ſhort thereof, and lying hidden as it were within
the arm-pits. And generally, none that haue their feet diuided into toes, haue vdders behinde
vnder their hin legs. A Sow at euery farrow giues the formoſt nipples to thoſe pigs that come
firſt, and ſo in order as they be farrowed: and thoſe teats be they that are next to her throat, and
higheſt. Euery pig knowes the own pap, and will take it and no other when it comes firſt into
the world; and thereof it is nouriſhed. If a pig be taken from the ſow, the milk of that pap wil
dry vp preſently, or returne backe, and the pap it ſelfe fall flat to the belly. Alſo if it chance
that but one ſucking pig be left, that pap alone wil do the part and let down milke, which Na-

ture

ture first appointed for that one pig. She Beares haue foure paps apiece. Dolphins haue no more but two teats and nipples in the bottom of their belly, and those not very apparant to the eye, nor streit and direct, but lying somwhat aside and byas: and no beast besides giueth sucke as it runneth but she. To conclude, Whales, Wirlepooles, and Seales, nourish their yong with their vdder and teats.

Chap. XLI.

¶ *Of Milke: and of what milke Cheese cannot be made.*

THe milk that comes from a woman before she hath gon 7 months with child is not good: but from that time forward it is wholsome, becaus̄e the infant may liue and do well after that terme. Many are so frim and free of milke, that all their breasts are strut and full thereof euen as far as to their arm-holes. Camels giue milke vntill they be great with yong again: and their milke is thought to be most sweet and pleasant in tast, if to one measure thereof you put three of water. A Cow hath no milke ordinarily before she hath calued. The first milke that she giueth downe is called Beestins: which, vnlesse it be delayed with some water, will soon turn to be as hard as a pumish stone. She Asses are not so soon with yong, but they haue milke in their vdders: but if they go in good and battle pasture, it is not good their yong foles should suck their milke in two daies after, for the very tast thereof is enough to kil them: and this disease that comes of Beestins is called Colostratio. The milk that those giue which haue teeth in both chawes is not good to make cheese of, becaus̄e it will not cruddle. Camels milke of all others is thinnest, and Mares milke next to it. Asses milk is holden for to be thickest, and therefore they vse it in stead of renning, to turn milke and gather curds thereof. It is thought also to be very good for to make womens skin faire and white. Certes the Empresse *Poppæa*, wife to *Domitius Nero*, had alwaies whersoeuer she went, 500 she Asses milch, in her train: and in their milke she bathed and washed her whole body, as in an ordinary bain, supposing that thereby her skin was not only whiter, but also more neat, smooth, and void of riuels. All sorts of milke will thicken with fire, and turne into whey with cold. Cowes milke maketh more cheese than Goats milk, by twice as much almost, although you take no more of the one than the other. The milke of those that haue aboue foure paps is naught for cheese: but theirs is better that haue but twain. The rennet of an hind-calfe or Leveret, and a Kid, is much commended. But especially of a Leveret or Rabbet, which also is medicinable for the flux of the belly: a thing to be obserued in them alone, of all creatures that are toothed in both chawes. A wonder it is, that barbarous nations liuing of milke, haue for so many hundred yeares either not knowne, or else not regarded the benefit of cheese: and yet they vsed to thicken their milk into a kind of pleasant foure curd in manner of a Sellibub; and to charn butter thereof, which is the skum and cream of milke, much thicker than that which is called whey. To conclude, I may not let passe, That Butter hath the vertue and properties of oile: insomuch as forrein and barbarous nations do anoint their children therewith, as we also do ours.

Chap. XLII.

¶ *Cheeses of sundry sorts.*

AT Rome (the only place that hath best meanes neere at hand, to judge of the fruits and commodities of all nations in the world) the cheeses which come out of the prouinces of Nemausium, and from the villages of Læso and Baux, are highly praised for the best; but they last not long: their commendation is for the present season while they be greene and new. There are brought good cheeses from two coasts of the Alps, which greatly praise the pasture thereabout. Also dainty cheeses are made in Dalmatia, from whence we haue passing good; and namely from Drinaldi. Moreouer, the prouince of Ceutronia sends vs excellent cheese from Vatusium. But the great store and plenty of cheese commeth from the Apennine mountain: which yeeldeth vs the Cebane cheese out of Liguria, which is very fine meate, notwithstanding it be made most of ews milk. Also out of Vmbria we haue good cheese, from the dairies along the riuer Æsio. Howbeit in the confines between Tuscane and Liguria, the monstrous great cheeses are made, and namely about Luca, for one of them weigheth a thousand pounds.

pounds. Next to these in goodnesse be those that are made neer the city of Rome about Vestinum: but from out of the Sæditian territory and the plains thereabout, there come cheese that passe all the rest. As for cheeses made of goats milke, they are not to be defrauded of their due praise, especially when they they are fresh and new made: and if besides, they may haue a little drinesse in smoke, which giueth both a good lustre, and also a pretty tast to them: for such cheeses be made within the very city of Rome, and go beyond all others. As for the cheeses made in France, they taste like a medicine, and haue an aromatical relish with them. For outlandish cheeses beyond-sea the Bithynian carry the best name. That there is a certain tarter or salter (if by nothing els) may wel be known by the tast of the cheese made thereof: for there is none, but the older they are, the more saltish they be: yet such are well known to recouer their fresh taste again, if they be soked in Thyme vinegre. Some report, that *Zoroastres* liued in the desart wildernesse 20 yeares with cheese: the which was so well tempered, that it seemed nothing old, for it neither moulded nor yet bred vermin.

Chap. XLIII.

¶ *The difference betwen the members of Man and other Creatures.*

OF liuing creatures vpon the land, Man alone is two footed. He only hath a cannell bone and shouliders, armes also to embrace: whereas others haue shoulders only & fore-legs to rest vpon. In all creatures that haue hands, they be fleshy within-forth only: for the back part consists of skin and sinewes. Some men there be with six fingers to one hand. Wee haue heard, that *M. Curiatius* a Nobleman of Rome had two daughters so handed: whereupon they were called *Sedigitæ*. Also there was a man named *Volcatius*, who was an excellent poet, and had six fingers to an hand, whereupon he was named *Sedigitus*. Euery finger of a mans hand hath three joints; the thumbe twaine, and it bendeth and boweth full opposite to all the rest of the fingers: and yet by it selfe it stretcheth awry from the others, and is thicker than the rest of the fingers. The little finger is equall in length to the thumbe: the fore-finger and the fifth (or ring finger) are iust of one size: betweene which the middle finger is the longest. Those foure footed beasts that liue of rauine and prey haue fiue toes to their fore-feet, whereas others haue but foure: Lions, Wolues, and Dogs, and some few others, haue likewise 5 toes or pawes in their hin-feet, and one like a spur, which beares forth behind, and hangs down from the pastern bone of the foot. All other smaller beasts haue fiue to a foot. The armes of all men be not of a iust and euen measure: for it is well known, That there was a Thracian sword-Fencer named *Studiosus*, belonging to the fence-schoole of *C. Caligula* the Emperour, whose right arme was longer than the left. Certaine beasts without reason vse the ministery of their fore-feet in stead of hands, and as they sit on their rumpe reach meat therewith to their mouth, as squirils.

Chap. XLIV.

¶ *The resemblance that Apes haue to men.*

AS for all the race and kind of Apes, they resemble the proportion of men perfectly in the face, nose, eares, and eye-lids; which eye-lids these creatures alone (of all foure-footed) haue vnder their eyes as well as aboue: nay, they haue paps and nipples in their brests, as women: armes also and legs bending contrarie waies, euen as ours doe. Nailes they haue also and fingers like to vs, with the middle finger longer than the rest, as ours be. A little they differ from vs in the feet; for somewhat long they are, like as their hands be; and the sole of their foot is answerable to the palm of their hand. Thumbs and great toes they haue moreouer, with joints directly like a man. And setting aside the member of generation, and that only in the he Ape, all inward parts are the very same that ours, as if they were made iust by one patterne.

Chap. XLV.

¶ *Of Nailes.*

NAiles are taken and reputed for the extremities and vtmost ends of the sinewes: and ye shall finde them in as many as haue fingers and toes. But in Apes they are channelled

halfe round like a gutter tile, whereas in man they be flat and broad. When one is dead they will grow. In rauenous creatures hooked they be and bowing inward: in dogs right and strait, saue only that which in most of them crooks from behind their legs like a spur. All creatures that haue the fashion of a foot, haue toes therto except an Elephant. And yet he seems to haue an appearance of fiue in number, but they are not diuided asunder, or if they be, they are not distinct one from another but very sleightly, and like rather to houfs than nails: the forefeet also are bigger than the hinder. In the hin-feet they haue short ioints. The elephant bends his hams inward, as doth a man: whereas all other liuing creatures bow the ioints of their hinder legs, otherwise than of the former. For such as ingender and breed yong aliue bend their knees before them: but the ioint of their hough behind clean backward. Mens knees and elbowes bow contrary one to the other: so do Beares and all the fort of Apes, which is the cause they be not so swift of foot as others. Foure footed beasts, as many as lay eggs (as the Crocodile and Lizards) haue their knees before, bending backward; but those behind bowing forward: and yet their legs be crooked like a mans thumbe. In like sort, they that haue many feet: vnlesse it be the hin feet of all, in as many as do skip and hop; for they all be straight. Birds, after the manner of foure footed beasts, doe bow their wings forward, but the ioint of their legges backeward.

In the knees of men there is generally reposed a certaine religious reuerence, obserued euen in all nations of the world: for humble suppliants creep and crouch to the knees of their superiors: their knees they touch, to their knees they reach forth their hands: their knees (I say) they worship and adore as religiously as the very altars of the gods: and for good reason haply they do so, because it is commonly receiued, That in them there lies much vital strength. For in the very ioint and knitting of both knees, on either side thereof before there are two emptie bladders as it were, like a paire of cheeks; which hollownesse and concauitie if it be wounded and pierced through, causeth as present death as if the throat were cut. In other parts likewise of the body we vse a certain religious ceremonie: for as our maner is to offer the backe part of the right hand to be kissed, so we put it forth and giue it as well in testimonie of faith and fidelitie. It was an antient fashion in Greece, when they would make court and with great respect render a supplication to some great personage, to touch the chin. In the tender lappet of the eare is supposed to rest the seat of remembrance, which we vse to touch when we mean to take one to beare witnesse of an arrest or other thing done, and to depose the same in the face of the court. Moreouer, behind the right eare likewise is the proper place of *Nemesis* (which goddesse could neuer yet find a Latine name, so much as in the very Capitol) and that place are we wont to touch with the fourth finger (which is next the least) in token of repentance, when we haue let fal some word rashly, and would craue pardon of the gods therefore. The crooked and swelling veins in the legs man alone hath, and women very seldome. *Oppius* writes, that *C. Marius* (who had bin Consul of Rome 7 times) endured, without sitting down for the matter, to haue those veins taken forth of his legs, a thing that neuer any was known to abide before him. All foure-footed beasts begin to go ordinarily on the right hand, and vse to ly downe on the right side: others go as they list. Lions and Camels only haue this propertie by themselues, to keep pace in their march, foot by foot, that is to say, they neuer set their left foot before their right, nor ouer-reach with it, but let it gently come short of it and follow after. Men & women haue the greatest feet in proportion of all creatures: but females vsually in euery kind haue lesse & slenderer feet than males. Men and women only haue calues in their legs, and their legs full of flesh. Howbeit we reade in some writers, That there was one man in Ægypt had no calfe at all to his legs, but was legged like a crane. Man alone hath palmes of his hands, & broad flat soles to his feet; and yet some there be who that way are deformed and disfigured. And thereupon it came that diuers came to be firnamed *Plani* [*i.* flat footed:] *Plauti* [*i.* splay footed:] *Scauri*, [*i.* with their ancles standing ouermuch out:] *Pauli*, [*i.* broad footed.] Like as of their misshapen legs some haue bin named *Vari* [*i.* wry legged:] others, *Vatiæ*, and *Vatinij*, [*i.* bow-legged:] which imperfections beasts also are subiect vnto. Whole hoofed are all they that beare not horns: in regard wherof they be armed with houfe in stead of that offensiue weapon: and such as they be haue no ancle bones: but all clouen footed haue those bones. Howbeit all that haue toes want ancles; and in a word, there is not one hath them in the fore-feet. Camels haue ancles like to Kine and Oxen, but somewhat lesse: for indeed they be clouen footed, although the

A the partition be very little, and hardy discerned vnder the foot, but seemeth flesh all ouer the sole, as Beares also, which is the cause that if they trauaile farre vnshod, their feet are surbated, and the beasts will tire.

Chap. XLVI.

¶ *A discourse of beasts houfes.*

THe Houfes of Horses, Mules, Asses, and such like beasts of carriage onely, if they be pared and cut, will grow againe. In some parts of Sclauonia, the Swine are not clouen-footed, but whole hoofed. All horned beasts in manner be clouen-footed: but no beast beares two hornes, and hath withall the houfe of one entire peece. The Indian Asse hath onely one horne. The wild Goat also called Oryx, is clouen houfed, and yet hath but one horne. The Indian Asse moreouer, of all the whole houfed beasts alone, hath the pasterne or ankle-bones. As for Swine, a mungrell kind they are thought to be of both, in regard of those bones; and thereupon are reputed filthy and acursed. They that haue thought that a man had such, are soon conuinced. As for the Once, he indeed alone of all those whose feet are diuided into toes, hath that which somewhat resembles a pasterne bone. So hath a Lion also, but that it is more crooked and winding. As for the streight pasterne bone indeed, it beareth out with a bellie in the joynt of the foot; and in that hollow concauitie wherein the said bone turnes, it is tied by ligaments.

Chap. XLVII.

¶ *Of Birds feet, and their Clawes or Tallons.*

OF Fowles, some haue their feet diuided into clees and toes; others be broad and flat footed: and some are betweene both; which haue indeed their toes parted and distinct, and yet their feet be broad between. But of all them that haue foure toes to a foot: to wit, 3 in the forepart, and one behind at the heele in manner of a spurre: howbeit this one is wanting in some, that are long legged. The Wrinecke or Hickway, with some few others, haue two before and other two behind. The same bird putteth out a tongue of great length, like to serpents. It turneth the necke about and looketh backward: great clawes it hath like those of Choughes. Some bigger birds haue in their legs one other shanke-bone more than ordinarie. None that haue crooked tallons, be long legged. All that staulke with long shankes, as they fly stretch out their legges in length to their tailes: but such as be short legged, draw them vp to the midst of their belly. They that say, No bird is without feet: affirme also, That * Martinets haue feet: like as also the swift Swallow called Oce, and the sea Swallow Drepanis. And yet such birds come so little abroad, that they be seldome seen. To conclude, there haue been now of late, Serpents knowne flat-footed like Geese.

* *Apodes.*

Chap. XLVIII.

¶ *Of the feet of Insects.*

ALl Insects hauing hard eies, haue their fore-legges longer than the rest, to the end that otherwhiles they might with them, scoure their eies, as we see some flies doe: but those whose hinder-legs are longest, vse to skip and hop, as Locusts. Howbeit, all of them haue six legs apeece. Some Spiders there be, that haue two ouer and aboue the ordinarie, and those be very long: and euery leg hath three joynts. As for some sea-fishes, we haue said before that they haue eight legs: namely, Many feet, Pourcuttles, Cuttles, Calamaries, and Crabfishes: and those moue their fore-clees like armes a contrary way, but their feet either they turne round or else fetch them crooked atone side: and a man shall not see any liuing creature againe, al round, but they. As for others, they haue two feet to guide them and lead the way; but Crabs onely haue foure. There be Insects besides vpon the land, that exceed this number of feet; and then, they haue no fewer than twelue: as the most fort of wormes: yea and some of them reach to an hundred. No creature whatsoeuer hath an odde foot. As touching the legs of those which bee whole houfed, they be all full as long when they first come into the world, as euer they will be: well may they shoot out bigger and burnish afterward, but (to speake truly and properly) they

grow no more in length. And therefore when they be yong sucking foles, a man shall see them G
scratch the haire with the hinder feet: which, as they wax elder and bigger, they are not able to
do, because their legges thriue only in outward compasse, and not in length. Which also is the
cause, that when they be new foled, they cannot feed themselues but kneeling, vntill such time
as their neckes be come to their full growth and just proportion.

Chap. XLIX.

¶ *Of Dwarfes: and genitall parts.*

THere are no liuing creatures in the world (euen the very fowles of the aire not excepted)
but in each kind there be dwarfs to be found. As for those males which haue their instru- H
ments of generation behind, we haue sufficiently spoken. In Wolues, Foxes, Weesils, and
Ferrits, those genitall members be of a bonie substance; and of them there be soueraigne medi-
cines made, for to cure the stone and grauell in mans bodie engendred. The Beares pisle also,
becommeth as hard as an horn (men say) so soone as his breath is out of his bodie. As for Ca-
mels pisles, they vse in the East countries to make their best bow strings therof, which they ac-
count to be the surest of all others. Moreouer and besides, the genitall parts put a difference
between nation and nation; also between one religion and another: for the priests of *Cybele* (the
great mother of the gods) vse to cut off their owne members and to gueld themselues, without
danger of death. On the contrarie side, some few women there be, monstrous that way, and in I
that part resemble men: like as we see there are Hermaphrodites, furnished with the members
of both sexe. In the daies of *Nero* the Emperor, the like accident was seen (and neuer before) in
some foure-footed beasts. For he, in very truth, exhibited a shew of certaine mares that were of
the nature of those Hermaphrodites, found in the territorie of Treuiers in France: and they
drew together in his owne coach. And verily a strange and wondrous sight this was, To see the
great monarch of the world, sit in a charriot drawne by such monstrous beasts. As touching the
stones of Rams Buckes, and greater beasts, they hang dangling downe between their legs: but in
Bores, they be thrust together, & knit vp short close to the bellie. Dolphines haue these parts
very long, and the same lying hidden within the bottom of their bellies. In Elephants likewise
they be close and hidden. In as many creatures as doe lay egges, the stones sticke hard to their K
loines within the bodie: and such be euer most quicke of dispatch in the act of generation, and
soone haue done the feat. Fishes and Serpents haue none at all; but in stead therof there be two
strings or veines reach from their kidnies to their genitall member. The * Buzzard (a kind or
Hawke) is prouided of three stones. A man hath his cods sometime bruised and broken, either
by some extraordinarie accident, or naturally: and such as be thus burst, are counted but halfe
men, and of a middle nature betweene Hermaphrodites and guelded persons. To conclude, in
all liuing creatures whatsoeuer, the males be stronger than the females, setting aside the race of
Panthers and Beares.

* *Triorchite.*

Chap. L.

¶ *Of Tailes.*

THere is not a liuing creature, excepting men and Apes (take as well those that bring forth
their yong aliue, as others that lay egges only) but is furnished with a taile, for the neces- L
sarie vse of their bodies. Such as be otherwise rough-haired and bristly, yet haue naked
tailes, as Swine: those that be long shagged and rugged, haue very little and short skuts, as
Beares: but as many as haue long side haires, be likewise long tailed, as Horses. If Lizards or
Serpents haue their tailes cut off from their bodies, they will grow againe. In fishes they serue
in good stead, as rudders and helmes to direct them in their swimming: yeathey fit their turnes
as well as oares, to set them forward as they stirre them, to this or that hand. There be Lizards M
found with double tailes. Kine and Oxen haue the longest rumpe for their tailes of any other
beasts; yea and the same at the end, hath the greatest tuft and bush of haire. Asses haue the said
docke or rumpe longer than horses: and yet all such beasts either for saddle or packe, haue it
set forth with long haires. Lions tailes are fashioned in the very tip thereof, like vnto Kine
or Oxen, and Rats: but Panthers are not after the same manner tailed. Foxes and Wolues
haue

A haue shag tailes like sheep, but that they be longer. Swine carie their tailes turned and twined
round. And Dogs, that be of curres kind and good for nothing, carrie their tailes close vnder-
neath their bellies.

Chap. LI.

¶ *Of Voices.*

Aristotle is of opinion, That no liuing creature hath any voice, but such only as are furnished
with lungs and wind-pipes: that is to say, which breath and draw their wind: and therefore
he holdeth, that the noise which we heare come from Insects, is no voice at all, but a very B
found, occasioned by the aire that gets within them, and so being enclosed, yeelds a certaine
noise, and resoundeth againe. And thus it is (quoth he) that some keep a humming or buzzing,
as Bees: others make a cricking with a certain long traine, as the Grashoppers; for euident it is,
and wel known, that the aire entring into those pipes (if I may so term them) vnder their breast,
and meeting with a certaine pellicle or thin skin, beates vpon it within, and so sets it a stirring,
by which attrition, that shril found commeth. Again, it is as apparent, that in others, and name-
ly, Flies and Bees, the buzzing which we heare, begins and ends euer with their flying. For (no
doubt) that found commeth not of any wind that these little creatures either draw or deliuer,
but of the aire which they hold inclosed within, and the beating of their wings together. As for
C Locusts, it is generally beleeued & receiued, that they make that found with clapping of their
feathers and wings and thighs together. In like manner, among fishes in the waters, the great
Scallops make a certaine noise as they shoot out of the water. But soft fishes and such as lie
couered with a crust or shell, neither vtter voice, nor yet yeeld found. As for other fishes, al-
though they be without lungs and pipes, yet are they not quite mute, but deliuer a certaine
found. Howbeit, they that would maintaine, that fishes are dumbe indeed, doe cauill and say,
that such a noise commeth of crashing and grinding their teeth together. But what will they
say then to the water-Goat, & the riuer Bore, which in the riuer Achelous do euidently grunt:
as also others, wherof we haue spoken? Againe, such as lay egs do hisse: and Serpents draw their
D hissing out in length. The Tortoise hisses likewise, but after a broken manner, with staies and
rests between. Frogs keep a croaking after their kind, as hath been said before: and yet a man
may seem well to doubt therof, how it should be? considering, that the noise which they make
comes but from their teeth and mouth outward, and is not framed in their breast or stomacke.
Howbeit, in them there is great difference, by occasion of the nature of diuers countries. For
in Macedonie (by report) they are mute: and there also the Swine be dumbe. As for birds, the
least euermore be most full of chirping, chaunting, and singing; and most of all, about the trea-
ding time. Some of them keepe a singing when they fight, as Quailes: others, when they goe to
fight, as Partridges: and some again after victorie, as cocks. And they haue a crowing by them-
E selues differing from the cackling of hens: whereas in other birds you canot discerne the male
from the female by the singing, as we see in Nightingales. Some sing all the yeare long, others
at certaine times, as we haue more at large declared, in the particular treatise of each bird. The
Elephant he sends out at his very mouth (somwhat short of his muffle) a certaine found like to
sneesing: but thorough that muffle or trunke of his, he sounds (as it were) out of a trumpet. Kine
only of females, haue a bigger voice than Buls: for in euery kind else the female hath a smaller
voice than the males: like as we see in mankind, the gelded Eunuchs. As an infant is comming
into the world, it is not heard to crie all the while that it is in the birth, before it be fully born.
When it is a yeare old, it begins to prattle and talke, but not before. King *Cræsus* had a sonne,
who lying swoddled in his cradle, spake by that time he was 6 months old: but this was a pro-
digious signe, and prefaged the finall ruine of that kingdome. Those children that begin with
their tongue betime, are later ere they find their feet. The voice in man or woman beginneth to
change and waxe greater at 14 yeares old. The same in old age growes again to be smaller: and
in no other creature doth it more often alter. Moreouer, as touching the Voice, there be strange
and wonderfull matters reported, and those worth the rehearsal in this place. For first and fore-
most, we do see, That vpon the skaffold or stage in publick Theatres, if the floore be strowed o-
uer well and thicke with saw-dust or sand, the voice of the actors will be drowned and lost, yea,
and remain still aboue the skaffold, as if it were there buried: alsowhere there be hollow and vn-

euen wals round about or emptie drie-fats and tuns set, the voice will be taken vp in them, and G
passe no farther. But the same voice, betweene two wals directly set one by another, runs apace:
yea, and through a vault it may be heard from the one end to the other, be the sound neuer so
low; prouided, that all be smooth and euen between, and nothing to hinder the passage thereof.
To speake yet somwhat more of the Voice: In it doth rest a great part of the countenance
and visage of man, wherby he is discerned and knowne. For we know a man by hearing his voice
before we see him, euen as well as if our eies were fixed vpon him. And see how many men and
women there are in the world, so many sundrie voices there bee, for each one hath a seuerall
voice, as well as a face, by himselfe. And hereof arises that varietie of nations, that diuersitie of
languages all the world through. From hence come so many tunes in song, so many notes in H
Musick, as there bee. But aboue all, the greatest thing to be noted in Voice, is this. That wheras
the vtterance of our mind, therby doth distinguish vs from brute and wild beasts: the same euen
among men maketh as great a difference betweene one and another, as the other is betweene
man and beast.

Chap. LII.

¶ *Of the excrescence and superfluitie of some members. Also the discourse and sayings of Aristotle as touching mans life*

LOoke what part is more than ordinarie by nature, in any liuing creature, the same serues to
no vse. As for example, the sixt finger in a mans hand is euermore superfluous, and there- I
fore fit for nothing. It was thought good in Ægypt once to nourish and keep a monstrous
man who had foure eies, wherof two stood in the backe part of his head behind: but surely he
saw neuer a whit with them. I wonder verily, that *Aristotle* not only beleeued, but also sticked
not to set downe in writing, that there were certaine signes in mans bodie, whereby we might
foreknow whether he were long liued or no. Which, albeit I take to be but vanities, & not rash-
ly to bee vttered without good aduisement (because I would not haue men amused, and busi-
ly occupied in searching Prognostications in themselues, as touching their owne life) yet will
I touch the same, and deliuer them in some sort, since so great a clerk as *Aristotle* was, held them
for Resolutions, and thought them worth the penning. He putteth downe therefore, as signes of
short life, thin teeth, long fingers, a leaden hew, many lines in the palme of the hand, with crosse K
bars or short cuts. Contrariwise, he saith, That those who are Lute backed, thicke shouldered,
and bending forward, who also in one hand haue two long life lines, and aboue 32 teeth in their
head, and besides are wel hanged, and haue large eares, bee long liued. And as far as I can guesse,
he requires not, that all these signes should concurre and meet together, for to signifie as is be-
foresaid: but, as I suppose, his meaning is that euery one of them by it selfe is significatiue and
sufficient. Surely, these Physiognomers & Chiromantines or Palmestrie, as friuolous and foo-
lish as they be, yet now adaies are in credite, and euery man is full of them. *Trogus*, a most graue
and renowmed Author among vs, is of opinion moreouer, That there is judgment to be giuen,
not only of mens complexions, but also of their conditions, by their very sight & countenance:
and surely, I think it not amisse to set downe his very words. A large and broad forehead (saith L
he) is a token of a dull conceit and heauie vnderstanding: and contrariwise, they that haue a lit-
tle forehead, are by nature, fickle and inconstant: and finally, a round forehead, and bearing out
argues anger and choller, as if this outward tumor thereof bewraied the swelling and boiling,
of that humor. In whomsoeuer the eie-browes are streight and lie euen, they betoken soft and
effeminat persons: but if they bend and bow toward the nose, they shew austeritie. Say their tur-
ning and bending be toward the temples of the head, they are signes of a mocker and scorner:
finally where they lie very low, such persons (be ye sure) are malicious, spightfull, and enuious.
Long eies, in whomsoeuer they bee, do testifie hurtfull and dangerous persons. They that haue
the corners full of flesh, are of a malicious nature: where the white of the eie is spread large and
broad, it is a token of impudencie. And such as euery whiles be winking and closing of their
eie-lids, (trust me truly) they be giddie-headed, and vnstaied. Those that haue great eares, and M
especially the laps therof, make account they be blabs of their tongue, and fooles withal. Thus
much of Physiognomie, according to *Trogus*.

CHAP.

A

Chap. LIII.

¶ *Of the Spirit and breath of liuing creatures: also what things be venomous in taste, and do kill. Of mens food. And last of all, what hindereth digestion and concoction of meat.*

THe breath of Lions hath a very strong deane and stinking smell with it: but that of a beare
is pestilentiall and deadly: insomuch, as no beast will touch where a beare hath breathed
and blown vpon: for surely such will sooner corrupt & putrifie than others, as if they were
blasted. As for the breath of a man, Nature hath suffered it to be infected many waies, namely,
B by the viands and meat that he eateth; by faulty and rotten teeth; and most of all by old age.
And yet our breath, without which there is no sence, feeleth no pain it self, as being void of fee-
ling and altogether senceleſſe. The same goeth and commeth continually without rest and in-
termission: the same is alwaies new and fresh: and as it shal depart out of the body last, so it shal
remaine alone, when all is gon besides it. Finally, returne it shall into the aire and the heauen,
from whence it first came. Now, albeit this breath that we draw, be the very means whereby we
liue, and without which we cannot maintain our life, yet otherwhiles troublesome it is vnto vs,
and plagueth vs as a very punishment ordained for vs. The Parthians of all others be most sub-
ject to this inconuenience, euen from their very youth, by reason of the grosse feeding of all
meats indifferently, without choise and discretion: and specially of their drunkennesse. For ex-
cessiue drinking of wine causeth stinking breat. But the Nobles and great States of that coun-
C trey haue a remedy therfore, and make their breath sweet, by taking with their meats the ker-
nels of Pome-citrons, which yeeld a most pleasant sauor. The very breath of Elephants causeth
Serpents to come out of their holes: but Stags and such other Deere, therewith do blast & burn
them. As touching certain kinds of men, who by sucking only could draw & fetch out the poy-
son out of bodies wounded by venomous Serpents, we haue already spoken. As for hogs, they
will feed of Serpents, and do well enough, wheras to other creatures they be no better than poi-
son. All those little creatures, which we named Insects, wil die if they be but sprinckled or wet
with oile. The Vultures or Geires which flie from sweet ointments, are desirous yet of other
odors and perfumes: like as Beetles like well the smell of Roses. Some Serpents there be that
the Scorpion kils. The Scythians poison their arrow heads with the venomous filthy bloud of
D vipers and mans together. A present poison this is, and remedilesse; and it no sooner toucheth
but it taketh, and killeth forthwith. As touching those creatures that feed of poison, wee haue
spoken heretofore. Moreouer, some creatures there be, which otherwise being harmlesse, if they
be fed with venomous beasts or plants, become also themselues noisom & dangerous. The wild
bores in Pamphylia, and vpon mountains of Cilicia, that haue eaten Salamanders, become ve-
nomous: and whosoeuer chance to eat of their venison, are sure to die vpon it. And yet cannot
a man know any such venome therein, either by sent at nose, or taſt of tongue. Moreouer, the ve-
ry water or wine wherein a Salamander hath bin stifled and suffocated, or whereof it hath but
drunk, wil kil a man that shall but sip thereof neuer so little. The like is to be said of that Frog
which we cal *Rubeta* [*i.* the toad that liues in bushes.] See how many ambushes our life is sub-
E ject vnto! Wasps feed greedily vpon Serpents, and vpon that food their stings be deadly. And
therefore you see it skilleth much what meats we eat, and the maner of our food is very mate-
rial. As we may learn farther in that treatise which *Theophrastus* wrote of the Ichthyophagi that
liue of fish: where he hath set downe, That Kine and Oxen doth eat fish, but they must in any
case be aliue.

To come now vnto mens diet: their best and most wholsome feeding is vpon one dish and no
more, and the same plaine and simple: for surely this hudling of many meats one vpon another
of diuers tastes is pestiferous: but sundrie sauces are more dangerous than that. As touching
our concoction: all tart and sharp meats are of hard digestion: also fulnesse and surfeting:
F hasty and greedie feeding likewise be enemies to digestion, and hurtful to the stomack. In sum,
we digest our meat more hardly in Summer than in Winter, and in age worse than in youth.
Now to helpe and remedie all this excesse and enormitie, vomite hath beene deuised: but vse
it whosoeuer will, he shall find the naturall heat of his bodie thereby to decay: he shal sensibly
perceiue that it hurteth the teeth, and eies especially. To goe to bed vpon a full stomacke, and

to

to digeſt in ſleepe, is better to make a man fat and corpulent, than ſtrong and luſty. And therefore wreſtlers and champions who are acquainted with ful & liberall diet, vſe rather to walk after meat for to digeſt. And in one word, much watching maketh beſt digeſtion. G

Chap. LIIII.

¶ *Of making bodies fat or leane. Alſo, what things being taſted, do allay hunger, and quench thirſt.*

BOdies grow to be burly and groſſe, with ſweet meats, fat feeding, & much drinke: contrariwiſe, drie diet, actually cold, and thirſt withal, make a body lean. There be beaſts in Africk, and eſpecially the leſſer ſort, which drink not aboue once in foure daies. A man may well liue 7 daies without any food whatſoeuer: & wel is it knowne, that many haue continued more than 11 daies without meat or drink. There haue bin ſome known ſo hungry euermore that nothing would ſatisfie them, and ſuch haue died for very famine, although they did nothing elſe but eat: a diſeaſe incident to no creature but a man. Some again can aſſwage and appeaſe their hunger, yea, and ſlack and extinguiſh their thirſt with a very little, and yet preſerue & maintain the naturall ſtrength of their body: namely, with taſting butter, cheeſe made of Mares or Aſſes milk, and Licorice. But to conclude and knit vp this diſcourſe: the worſt and moſt dangerous thing euery way that can be in all the courſe of our life, is Exceſſe and Superfluity; but to the health of our bodies moſt of all: and therefore the beſt courſe is, to cut off by all meanes that which is offenſiue and heauy to the body. Thus much ſhall ſuffice as touching liuing and ſenſible creatures. Let vs therefore now proceed to the reſt of Natures workes. H I

THE TVVELFTH BOOKE OF THE HISTORIE OF NATVRE, WRITTEN BY C. PLINIVS SECVNDVS. K

The Proeme.

L

THus you ſee by that which hath bin written before, what are the natures as well in generall, as particularly in parts, of all liuing and ſenſitiue creatures within the compaſſe of our knowledge. It remaineth now to diſcourſe of thoſe which the earth yeeldeth: and euen they likewiſe are not without a ſoule in their kind (for nothing liues which wanteth it:) that from thence we may paſſe to thoſe things that lie hidden within the earth, and are to be digged out of it: to the end, that no worke and benefit of Nature might ouerpaſſe our hands, and be omitted. And in truth, theſe treaſures of hers lay long couered vnder the ground, inſomuch as men were perſuaded, that Woods & Trees were the laſt & only goods left vnto vs and beſtowed vpon vs by Nature. For of the fruit of trees had wee our firſt food: their leaues and branches ſerued to make vs ſoft pallats and couches within the caues: and with their rinds and bark we clad and couered our nakednes. And euen at this day, ſome Nations there be that liue ſtill in that ſort, and no otherwiſe. A wonderfull thing therefore it is, that from ſo ſmall and baſe beginnings wee ſhould grow to that paſſe in pride, that wee muſt needs cut through great mountaines for to meet with marble: ſend out as far as to the Seres for ſilk ſtuffe to apparell vs: diue downe into the bottome of the red ſea for pearls: and laſt of all ſinke deepe pits euen to the bottom of the earth, for the precious Hemerauld. For this pride and vanitie M

A *vanitie of ours, we haue deuiſed means to pierce and wound our eares: becauſe, forſooth it would not ſerue our turns to weare coſtly pearles and rich ſtones in carkanets about our necke, borders vpon the haire of our head, bracelets about our arms, and rings on our fingers; vnleſſe they were ingrauen alſo, and cut into the very fleſh of our bodies. Well then, to follow the courſe of Nature, and the order of our life (as meet it is we ſhould) wee will treat in the firſt place of Trees, and lay before mens faces the life of the old world, and what was their behauior and demeanure at the firſt, in their maner of liuing.*

Chap. I.

¶ *The honour done in old time to Trees. When the Plane-trees were firſt knowne in Italy, and of their nature.*

B

IN old time, Trees were the very temples of the gods: and according to that antient manner, the plaine and ſimple peaſants of the country, fauoring ſtill of antiquity, do at this day conſecrate to one god or other, the goodlieſt and faireſt Trees that they can meet withal. And verily we our ſelues adore not with more reuerence & deuotion the ſtately Images of the gods within our temples (made though they be of glittering gold, and beautifull yuorie) than the very groues and tufts of trees, wherein we worſhip the ſame gods in all religious ſilence. Firſt and formoſt, the antient ceremonie of dedicating this and that kind of Tree to ſeuerall gods, as proper and peculiar vnto them, was alwaies obſerued, and continueth yet to this day. For the mighty great C Oke named Æſculus, is conſecrated to *Iupiter*; the Laurell to *Apollo*; the Oliue tree to *Minerua*; the Myrtle to *Venus*; and the Poplar to *Hercules*. Moreouer, it is receiued and beleeued generally, That the Syluanes and Faunes, yea, and certaine goddeſſes, are appropriate and aſſigned to woods and forreſts; yea, there is attributed vnto thoſe places a certain diuine power and godhead, there to inhabit: as well as vnto heauen the proper ſeate for other gods and goddeſſes. Afterwards, in proceſſe of time men began to taſte alſo the fruit of Trees, and found therein a iuice (without all compariſon) more lenitiue and pleaſant to the contentment of their nature than that which came of corn and grain: for therof made they Oile, a ſingular liquor ſo refreſh and comfort the outward members and parts of the body: out of it they preſſed wine, the one- D ly drinke that giueth ſtrength within, and fortifieth the vitall powers. From thence gather wee ſo many fruits, yerely growing and comming of themſelues without the labour and induſtry of man. And albeit, to ſerue our belly & pleaſe our tooth, we ſtick not to maintain fight and deale in combat with wild beaſts in the forreſts; although we hazard our ſelues in the ſea, to meet with monſtrous fiſhes which are fed with the dead bodies of men caſt away by ſhipwracke; and all to furniſh and ſet out the table; yet is not the cheare thought good enough, vnleſſe fruits alſo be ſent vp at the later end, that they may haue the honor in al feaſts of the ſecond ſeruice, and the banket. Beſides all this, Trees ſerue our turns for a thouſand neceſſary vſes, without which our life could not be well maintained. With Trees we ſaile ouer ſeas into ſtrange lands, and by tranſporting commodities and merchandiſe too & fro, we make lands meet together: of Trees E we build our houſes wherein we dwell. Trees were the matter in times paſt, whereof were made the images of the gods. For as yet no man thought of the coſtly Anatomy of the elephant, neither was their tooth in any account: whereas now adaies we make the treſſels, frames, and feet of our tables, euen of the ſame yuory that we ſee the faces of gods are portraied of, as if we had our warrant from them to begin & maintain our riot and ſuperfluity in this behalf. We find in old Chronicles, That the Frenchmen and Gaules took occaſion firſt to come down into Italy, & to ouerſpread the whole country (notwithſtanding they were beforetime debarred from thence by the impregnable fort, as it were, and the vnpaſſeable bulwark of the Alps between:) becauſe one *Elico*, a Swiſſer or Heluetian, who had made long abode at Rome (where he was entertained for his skil in Smiths worke and Carpentry) at his return home again into his country, brought F ouer with him dry figs and Raiſons: the firſt fruits alſo as it were of oile & wine for a taſt, to ſet their teeth a watering. And therefore the French had good reaſon, and might wel be born withall and pardoned, for ſeeking to conquer euen by force of armes thoſe countries where ſuch fruits grew. But who would not maruell rather at this, That our people here ſhould go into far countries, and fetch a tree from thence, euen out of another world, only for the ſhade that it giueth?

veth? For surely, of fruitfull trees Italy hath store enough: and what tree should that be, but the very Plane? brought first ouer the Ionian sea into the Isle Diomedea, for to beautifie the tomb of *Diomedes*: from thence translated into Sicily, and so bestowed at length vpon Italy, & there planted, as a most singular, rare, & speciall tree. But now is it carried as far as Terwin and Tournay in France, where it is counted an appertenance to the very soile that paieth tribute: insomuch, as people that will but walk and refresh themselues vnder the shadow of it, must pay a custome therefore vnto the people of Rome. *Dionysius* king of Sicily, and the first of that name, caused them to be brought from Rhegium in Calabria to his Roial city, where his pallace was, only of a singularity, because they should be seen to giue a shade before his house, where afterwards was made the Colledge or place of publick exercise. But these trees did not greatly like the soile, for they neuer grew big, nor prospered to any purpose. Howbeit, I find in writers, that there were other besides in Italy, and namely about Adria, as also in Spain. And all this happened about the time that Rome was sacke by the Gauls. But afterwards they came to be so highly esteem'd, that for to make them grow the better, men would be at the cost to water them with wine: for this was found by experience, that nothing was so good for them as to poure wine to their roots. Thus haue we taught euen our trees also to drinke wine, and be drunke. The Plane trees of any great name at first, were those that grew in the walking place of the Academia in Athens; where the root of one outwent the boughs 36 cubits in length. Now in this age there grows a famous one in Lycia, neer to the high way were men passe too & fro, & it hath a pleasant cold fountain adioining to it: the same is hollow within like to a house, & yeelds a caue of 81 foot in compasse: but it caries such an head with al like a groue, so large, so broad, & so branched, that euery arm resembles one entire tree: insomuch, as the shade therof takes vp & spreadeth a great way into the fields. And because in euery respect, it might resemble a very cabbin and caue indeed, there are stony banks & seats within, in form of an arbor round about, made as it were of pumish stone ouergrown with mosse. And in truth, this tree, and the scituation therof is so admirable, that *Licinius Mutianus* thrice Consull, and lately Lieutenant generall and Gouernor of that Prouince, thought this one thing worthy to be recorded as a memoriall to posterity, That he and 18 more persons of his company, vsed to dine and sup within the hollownesse of that tree: where the very leaues yeelded of the own sufficient bed and bench-room to rest and repose themselues: where they might sit secured from danger of wind to blow vpon them: where whiles he sat at meat, he wished nothing more than the pleasure to heare the showers of rain to pat drop by drop, and rattle ouer his head vpon the leaues: & finally, that he tooke much more delight to lie within the said cabbin, than in a stately chamber built of fine marble, all glorious within with hangings of tapistrie and needleworke of sundry colours, and the same seeled ouer head with an embowed roofe laid with beaten gold. Moreouer, *Caligula* the Emperor had such another Plane tree growing in the country about Velitræ, most artificially: wherein he vsed to take great pleasure, with admiration of the sundry lofts and planks one ouer another, the large settles also and spacious branches that the boughs yeelded, where he was wont to sit at repast, making one of the 15 guests. For the room was of that capacity, that it would not only receiue so many to sit with ease at the table, but also the gentlemen and seruitors that waited and ministred vnto them: and he termed this supping place by the name of, His nest: because it seemed like a birds nest in a tree. There is to be seen at Gortyna, within the Iland Candy, one Plane tree neere vnto a faire fountain: recorded it is as well by Greekes as Latines in their writings, and by the testimony of them both, neuer sheds the leaues, but remains alwaies green, as well in Winter as Summer: by occasion whereof arose the tale (so much giuen is Greece to deuise fables, by and by of euery small matter) That *Iupiter* vnder that tree defloured the yong lady *Europa*: as if (forsooth) there were no other tree but it of the same kind and nature, in Cyprus. But as the nature of man is euermore curious, and seeketh after nouelties) the Candiotes desirous to haue of the same race within Creet, set many slips thereof in sundry places, as if they longed to haue more such vicious fruit (as is before-named:) for in very deed that Tree is in no one thing more commendable, than for excluding the heat of the Sunne in Summer, and admitting it in Winter. In the time of *Claudius Cæsar*, late Emperour, there was an enfranchised slaue belonging to *Marcellus Eserninus*, a daintie guelded Eunuch of Thessalie, and exceeding rich, who caused certain Plane trees to be brought out of Candie into Italie, for to plant them at a manor which he had in the the territorie neare vnto Rome. This freed Eunuch for to grow into more

A more power and fauor with *Cæsar*, had ingraffed himselfe, as adopted among his freed men: and surely for his wealth might well be called *Dionysius*, who was the first that transplanted these kind of trees. Thus you see, that ouer and aboue those monstruosities which Italy hath deuised of it selfe, we haue remaining and reigning among vs those also of strange and forraine nations abroad in the world.

Chap. II.

¶ *Of the low or dwarfe Plane tree. And who first deuised to clip and shred Arbours.*

B AS big as these Plane-trees, are yet there be those of a forced smalnesse to the other, called Cha mæplatani: whereby a man may see, that we haue inuented the meanes to haue abortiue trees also, euen to hinder their growth, that they cannot come to their ful perfection. And therefore euen in Trees as well as in other liuing creatures, there is a certaine infelicitie, which may well be termed, A dwarfish vntowardnesse. This smalnesse in trees may come, by the maner of planting them, as wel as by cutting and keeping them downe. The first man that deuised to shred and cut arbors, was one *Cn. Martius*, a gentleman of Rome, and a fauorit of the Emperour *Augustus*; and this inuention hath not bin knowne aboue 80 yeares.

C

Chap. III.

¶ *Of Trees that be strangers in Italy: and namely of the Citron or Limon Tree.*

CHerry-trees, Peach-trees, and generally all that either haue Greek names or any other but Latine, are held for aliens in Italy. Howbeit, some of them now are infranchised and taken for free denizens among vs: so familiar they be made vnto vs, and they like the ground so well. But of them, we will speake in the ranke of those trees that beare fruit. For this present we are to treat of those that be meere forrainers: and for good lucke sake, begin we will with that
D which of all others is most holesome; to wit, the Citron tree, called the Assyrian tree; and by some, the Median Apple-tree: the fruit whereof is a counterpoison and singular Antidote against all venome. The tree it selfe, bears the leafe like vnto an Arbut tree; mary it hath certain pricks among. The Pomecitron is not so good to be chewed and eaten of it selfe: howbeit very odoriferous it is: as be the leaues also therof, which are vsed to be laid in wardrobes among apparel; for the smel thereof wil passe into the cloths, and preserue them from the moth, spider and such like vermin. This tree beares fruit at all times of the yere; for when some fall for ripenesse, others wax mellow; and some again, begin then but to shew their blossome. Many forrainers haue assaied to transplant them, and set them in their own countries, in regard of their excellent vertue to resist poisons. And for this purpose they haue caried yong quicksets, or plants
E of them, in earthen pots made for the purpose, and inclosed them well with earth: howbeit the roots had liberty giuen them to breath (as it were) at certain holes for the nones, because they should not be clunged and pent in prison. Which I rather note, because I would haue it known once for all, and well remembred, That all plants which are to be remoued and carried far off, must be set very close, and vsed in the same order most precisely. But for all the care and paines taken about it, for to make it grow in other countries, yet would it not forget Media and Persia, nor like in any other soile, but soon die. This is that fruit, the kernels wherof (as I said before the lords and great men of Parthia vse to feeth with their meat, for to correct their soure and
F stinking breaths. And verily there is not a tree in all Media, of better respect than is the Citron tree. As for those trees in the region of the Seres (which beare the silk wool or cotton) we haue spoken thereof in our Cosmographie, when we made mention of that Nation.

Chap. IV.

¶ *Of Indian Trees: and when the Ebene was first knowne at Rome.*

IN like manner, discourse we haue of the talnesse and greatnesse of Indian trees. Of all those trees which be appropriate to India, *Virgil* hath highly commended the Ebene aboue all the rest;

reſt: and he affirmeth, That it will not grow elſwhere. But *Herodotus* aſſigneth it rather to Æthyopia; and ſaith, That euery three yeares the Æthyopians were wont to pay by way of tribute vnto the kings of Perſia, * 100 billets of the timber of that tree, together with gold and yuory. Moreouer, I muſt not forget (ſince that mine author hath ſo expreſſely ſet it downe) that the Æthyopians in the ſame regard were bound to pay in like manner, twentie great and maſſie Elephants teeth. In ſuch eſtimation was yuorie then, namely in the 310 yeare after the foundation of Rome; at what time as *Herodotus* put forth that hiſtorie at Thurij in Italy. The more maruell it is, that we giue ſo much credit to that writer, ſaying as he doth, How that in his time & before, there was no man knowne in Aſia or Greece, nor yet to himſelfe, who had not ſo much as ſeen the riuer Po. The Card or Map of Ethiopia, which lately was preſented and ſhewed to the Emperor *Nero* (as we haue before ſaid) doth ſufficiently teſtifie, That from Syene (which confines and bounds the lands of our Empire and dominion) as far as to the Iſland Meroe, for the ſpace of 996 miles, there is little Ebene found: and that in all thoſe parts betweene, there be few other trees to be found, but Date trees. Which peraduenture may be a cauſe, That Ebene was counted a rich tribute, and deſerued the third place, after Gold & Iuory. Certes, *Pompey* the Great, in that ſolemnitie of triumph for the victorie and conqueſt of *Mithridates*, ſhewed one Ebene tree. *Fabianus* is of opinion, that it wil not burne: howbeit, experience ſheweth the contrary, for take fire it will, yea and caſt a pleaſant and ſweet perfume. Two kindes there be of Ebene: the one, which as it is the better, ſo likewiſe it is rare and geaſon; it carrieth a trunke like another tree, without knot, the wood thereof is blacke and ſhining, and at the very firſt ſight, faire and pleaſant to the eie, without any art or poliſhing at all. The other is more like a ſhrub, and putteth forth twigs as the Tretrifolie. A plant this is, commonly to be ſeene in all parts of India.

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G H I

Chap. V.

¶ *Of certaine Thornes, and Fig-trees of India.*

THere groweth alſo among the Indians, a Thorne reſembling the later kind of Ebene: and found to ſerue for the vſe of candles: for no ſooner commeth it neere vnto the fire, but it catcheth a flame, & the fire leaps preſently vnto it. Now it remains to ſpeak of thoſe trees, which ſet *Alexander* the Great into a wonder, at what time as vpon his victory he made a voiage for to diſcouer that part of the world. Firſt and formoſt, there is a fig-tree there, which beareth very ſmall and ſlender Figs. The property of this tree, is to plant and ſet it ſelfe without mans help. For it ſpreadeth out with mighty armes, and the loweſt water-boughes vnderneath, doe bend ſo downward to the very earth, that they touch it againe, and lie vpon it: whereby, within one yeares ſpace they will take faſt root in the ground, and put forth a new Spring round about the Mother-tree: ſo as theſe branches thus growing, ſeeme like a traile or border of arbors moſt curiouſly and artificially made. Within theſe bowers the Sheepherds vſe to repoſe and take vp their harbor in Summer time: for ſhady and coole it is, and beſides well fenced all about with a ſet of young trees in manner of a pallaiſado. A moſt pleaſant and delectable ſight, whether a man either come neere, and looke into it, or ſtand a farre off: ſo faire and pleaſant an arbour it is, all greene, and framed arch-wiſe in juſt compaſſe. Now the vpper boughes thereof ſtand vp on high, and beare a goodly tuft and head aloft like a little thicke wood or forreſt. And the body or trunke of the Mother is ſo great, that many of them take vp in compaſſe threeſcore paces: and as for the foreſaid ſhadow, it couereth in ground a quarter of a mile. The leaues of this Tree are verie broad, made in forme of an Amazonian or Turkiſh Targuet: which is the reaſon, that the Figges thereof are but ſmall: conſidering that the leaſe couereth it, and ſuffereth it not to grow vnto the full. Neither doe they hang thicke vpon the Tree, but here and there very thinne, and none of them bigger than a beane. Howbeit, ſo well and throughly ripened they bee with the heate of the Sunne, notwithſtanding the leaues are betweene, that they yeeld a moſt pleaſant and ſweet rellice in taſt, and are a fruit for a king, anſwerable to the mightie, huge, and prodigious tree that beareth it. Theſe Fig-trees grow abundantly about the riuer Aceſine.

K L M

CHAP.

A

Chap. VI.

¶ *Of the tree named Pala: of other Indian trees, whereof the names be vnknowne. Alſo of thoſe that beare wooll or Cotton.*

ANother tree there is in India, greater yet than the former, bearing a fruit much fairer, bigger, and ſweeter than the figs aforeſaid; and whereof the Indian Sages & Philoſophers do ordinarily liue. The leaſe reſembleth birds wings, carrying three cubits in length, and two in bredth. The fruit it puts forth at the bark, hauing within it a wonderfull pleaſant iuice: inſomuch as one of them is ſufficient to giue 4 men a competent and ful refection. The trees name
B is Pala, and the fruit thereof is called Ariena. Great plenty of them is in the country of the Sydraci, the vtmoſt limit of *Alexander* the Great his expeditions and voiages. And yet is there another tree much like to this, and beareth a fruit more delectable than this Ariena, howbeit, the guts in a mans belly it wringeth, and breeds the bloudy-flix. Whereupon *Alexander* made open proclamation and ſtraitly forbad, That no man ſhould taſte thereof. As for the Macedonian ſouldiers, they talked much of many other trees, but they deſcribed them in generall tearmes only, and to the moſt of them they gaue no names at all. For one tree there is beſides, in other reſpects reſembling the Terebinth, and it carrieth a fruit much like to Almonds; onely it is leſſe, but of a moſt ſweet and toothſome taſte. In Bactriana verily, ſome take it to be a ſpeciall
C kind of the Terebinth indeed, rather than a tree like vnto it: but that tree which carrieth a fine flax, whereof they make their dainty linnen & lawn, it hath leaues like to thoſe of the Mulbery tree, and beareth a red berry like to the hips of an Eglantine. They plant and ſet theſe in their fields and plains: and ſurely, ſtan ding as they do in ſuch order, there are no rowes of any trees that yeeld a fairer ſight and proſpect. The Oliue tree of India is but barren, ſaue that it brings a fruit much like the Wild Oliue.

Chap. VII.

¶ *Of Pepper trees: of the Clouetree, and many other.*

D THe trees that beare Pepper euery where in thoſe parts, be like vnto our Iuniper trees. And yet ſome haue written, That they grow only vpon the front of the hill Caucaſus on that ſide which lieth full vpon the Sun. The corns or graines that hang thereupon, differ from Iuniper berries: and thoſe lie in certain little huskes or cods like to the pulſe called Faſels or Kidney beans. If that be plucked from the tree before they gape and open of themſelues, they make that ſpice which is called long-Pepper: but if as they do ripen, they cleaue and chawn by little & little, they ſhew within, the white pepper: which afterwards being parched in the Sun, changeth colour, and waxeth black, and therewith riueled alſo. Peppers be ſubiect to the iniury of the weather as well as other fruits: for if the ſeaſon be vnkindly and vntemperat, they will catch a blaſt, and then the ſeeds will be deafe, void, light, & naught. This fault is called among the Indians, Brechmaſis, which in their language ſignifieth, an abortiue or vntimely fruit. This pepper of all other kinds is moſt biting and ſharp, but it is the lighteſt, and pale of colour with-
E all. The blacke is more kindly and pleaſant: and the white is more milde in the mouth than both the other. Many haue taken Ginger (which ſome cal Zimbiperi, and others Zingiberi) for the root of that tree: but it is not ſo, although in taſte it ſomwhat reſembles pepper. For Ginger grows in Arabia and Troglodytica in meadowes about the villages: and it is a white root of a certain little herbe. And how ſoeuer it be very bitter and biting, yet it quickly meeteth with a worme, and rottes. A pound of Ginger is commonly ſold at Rome for ſix deniers. Long pepper is ſoon ſophiſticated, with the Senuie or muſtard-ſeed of Alexandria: & a pound of it is worth
F fifteen Romane deniers. The white coſteth ſeuen deniers a pound, and the blacke is ſold after foure deniers by the pound. As for Pepper, I wonder greatly that it ſhould be ſo much in requeſt as it is: for whereas ſome fruits are ſweet and pleaſant in taſte, and therefore deſired; others beautifull to the eie, and in that regard draw chapmen: Pepper hath neither the one nor the other. A fruit or berry it is (call it whether you will) neither acceptable to the tongue, nor delectable to the eie: and yet for the biting bitterneſſe that it hath, we are pleaſed therwith, and we muſt haue it fet forſooth from as far as India. What was he, gladly would I know, that yen-

tured first to bite of pepper and vse it in his meats? Who might he be, that to prouoke his appetite and find himselfe a good stomack, could not make a shift with fasting and hunger onely? Surely, Ginger and Pepper both, grow wild in those countries where they do like, and yet wee must buy them by weight, as we do gold and siluer. Of late daies here in Italy, wee haue made means to haue the Pepper tree growing among vs: and verily a litle scrubby plant it is, or shrub rather, bigger somwhat than the myrtle, and not far vnlike. The graine that ours beareth, carrieth the very same bitternesse that the greene pepper of India is thought to haue before it be ful ripe. For here it wanteth the due parching and ripening against the sun: and by that means commeth short of the riuels and blacknesse that the outlandish pepper hath. Sophisticated it is, by intermingling with it the grains or berries of Iuniper: for surely, they do maruellous soon take the taste and strength of pepper. And as for the weight, there be diuers waies to deceiue the chapman therein.

Ouer and besides, there is another fruit that commeth out of India, like vnto pepper cornes, and it is called Cloues, but bigger somwhat and more brittle. And they say, that it groweth in a certain groue consecrated to their gods in India. Transported ouer it is vnto vs for the sweet smell that it casteth.

Moreouer, the Indians haue a thorny and pricky plant, which beareth a fruit like to pepper, and passing bitter: the leaues be smal and grow thick after the maner of Priuet: it putteth forth branches 3 cubits long: the bark is pale, the root broad and of a wooddy substance, resembling the colour of box. Of the infusion of this root in faire water, together with the seed, in a brasen vessell, is made that medicine or composition which is called Lycium. A bush there groweth likewise vpon mount Pelion [like Pyxiacantha, *i* the Berberrie bush] whereof is made a counterfeit Lycium. In like manner, the root of the Asphodill, with an Oxe-gal, Wormewoot, Frankincense, and the mother and lees of oile, will do the same: but the best Lycium, and most medicinable, is that which doth yeld a great froth or scum. The Indian merchants do send it ouer in bags made of the skins either of Camels or Rhinocerotes. In some parts of Greece they name the very bush whereof this Lycium is made, Pyxacanthum Chironium.

Chap. VIII.

¶ *Of Macir, Sugar, and the trees of the region Ariana.*

THe Macir likewise is brought out of India. A reddish bark or rind it is, of a great root, and beareth the name of the tree it selfe: but the form of that tree I know not how to describe. This rind sodden in hony, & so condit as a Succade, is a singular good medicine for those that be troubled with the Dysentery or bloudy flix: as for sugar, there is of it in Arabia; but the best comes out of India.* A kind of hony it is, gathered and candied in certaine Canes: white this is like gum [Arabick] and brittle between a mans teeth. The graines hereof when they are at the bigst, exceed not a filberd nut, and serue only for physick. In the realm of Ariana (which confineth and boundeth vpon the Indians) there is a certain thorny plant, so ful of sharp pricks, that it is comberous to them who come about it; which yeeldes a precious liquor issuing out thereof, like to Myrrhe. In the same prouince there grows a pestilent venomous shrubbe called Rhaphanus, bearing leaues like the bay tree, which with their fragrant smell train horses thither to eat thereof; but they are so good for them, that they left not *Alexander* the Great scarce one horse of all his Cauallerie, they died so fast of that food at his first entrance into the countrey. The like accident befell to him also among the Gedrosians. In like manner, there is another thornie plant (by report) in that region, leaued like the Laurell: the iuice and liquor whereof, if it be sprinckled or dashed in the eies of any liuing creature what soeuer, puts them quite out and makes them blind. Moreouer, they haue an herb there, of a singular pleasant sauor, but couered all ouer it is with little venomous serpents: their sting is present death. *Onesicritus* reports, That in the vales of Hircania there be trees like fig-trees, which the Hircanians call Qechi, out of which there distils or drops hony euery morning for the space of two houres.

* White sugar candie.

Chap. IX. ¶ *Of Bdellium: and the trees growing by the Persian gulfe.*

NEere to these parts lies Bactriana, wherin is the most excellent Bdellium. The tree that bears it is black, of the bignesse of an Oliue, with leaues like an Oke; and the fruit resembleth

bleth wild figs, and is of the same nature. The gum thereof, some cal Brochos; others, Malachra: and there be again that name in Maldacon. Howbeit, when it is blacke, and brought into roles or lumps, they giue it another name, and call it Hadrobolon. But indeed the right Bdellium when it is in the kinde, should be cleare, as yellow as wax, pleasant to smell vnto, in the rubbing and handling fatty, in taste bitter, and nothing soure. Being washed and drenched with wine (as they vse it in sacrifices) it is more odoriferous. There is found of it in Arabia, India, Media, and Babylon. As for that which is brought out of Media, they call it Peraticum: this is more tractable and gentle in hand, more crusty and bitter than the rest. But the Indian Bdellium is the moister and more gummy: this is sophisticated with Almonds, whereas the other kinds be made counterfeit with the bark of Scordastus, a tree that yeelds the like gum. But this trumpery and deceit is found by the smell, colour, weight, taste, and fire. And let this one word for all, serue as a generall rule to proue all such drugs and spices by. The Bactrian Bdellium when it is in the fire, yeeldeth a dry and smoky fume, and hath many white markes in it resembling the nailes of ones fingers: besides, it hath his just poise and weight that it ought to haue, neither more nor lesse; for as it should not be ouer weighty, so it may be too light. Commonly the price goeth after this rate, to wit, three deniers a pound.

Vpon these regions aboue-named, confineth Persis, whereas the red sea (which we named in our Geographie, the Persian gulfe) floweth at certain tides far into the land, and in these sands and downes are to be seen diuers trees of strange natures: for when the tide is past, you shal see at a low water some trees with their roots bare, as if they were eaten with the salt water; & a man cannot tell whether they were brought thither with the tide, or left in the ebbe: but surely the naked roots seem to clasp & take hold of the barren sands, as if they were Polype fishes should cling to any thing. And yet the same, when the sea floweth again, notwithstanding they be beaten vpon with the waues, stand fast and stir not. Again, at some high water and spring-tide, they be couered all ouer with water: and by good arguments it is euident to the eie, That nourished they be with the roughnesse of the surging sea-water. Their heights is wonderfull: and fashioned they be in forme of an Arbut tree: the fruit without-forth like to Almonds, but the kernels within be writhed.

Chap. X.

¶ *The Trees of the Iland Tylos within the Persian sea. Moreouer of those trees that bearc Wooll or Cotton.*

WIthin the same gulfe of Persia, there lieth an Isle full of woods to the East side, euen vpon that coast which is ouerflowed with the tide. Euery tree within, is equall in bignesse to the fig-tree: the blossoms that they carry, are so sweet, as it is wonderful & vnspeakable: the fruit like a Lupine, yet so rough & prickly, as no beast will gladly touch it. In the highest part and knap of the same Island, there be trees bearing wooll, but not in such sort as those of the Seres: for whereas the leaues of those do carry a downe or cotton, these are altogether without and barren thereof: and but that they be somewhat lesse, they might seeme to be vine leaues. Howbeit they beare a fruit at the last, like Gourds in fashion, and as bigge as Quinces; which when they be full ripe, do open and shew certain bals within of down: whereof they make most fine and costly linnen clothes.

Chap. XI.

¶ *Of the Gossampine trees: as also of other Cotton or Bombase trees, whereof clothes be made. In what manner diuers trees do yeeld their fruit.*

THere is a lesser Isle named Tylos, ten miles from the other, where be trees called Gossampines, which yeeld more cotton than those in the greater. King *Iuba* saith, that this cotton groweth about the branches of the said trees, and that the linnens made therof be farbetter than those of the Indians. As for those trees in Arabia whereof they make their linnen cloth, he affirmeth that they be called Cynæ, and haue leaues like the Date tree. Thus you see, how the Indians be clad with trees of their own. In those Islands called Tyli, there is another tree which beareth a blossome much like the floure of a White Violet, or Scock-gillofre, but foure times as

as big, which may seeme strange in that tract. And yet there is another Tree not vnlike to it, howbeit fuller of leaues, and bearing a blossome like to a Damaske or incarnate Rose. This floure shutteth close in the night, beginneth to open in the morning at the Sun-rising, and by noone sheweth out at the full. The inhabitants haue a by-word and saying among them, That it sleepes all night, and wakes in the morning. The same Island bringeth forth Date trees, Oliue trees, Vines, and amongst other fruits Figges also. No Trees there, doe shed their leaues: for the Island is well watered with cold and quicke-springs: and besides it hath the benefit of raine. As touching Arabia, which lieth neere and bordereth vpon these Islands, the spices and odoriferous fruits that be therein, are to be treated of with distinction: for their merchandise doth consist of roots, branches, barke, juice or liquor, gums and rosins, wood, twigs, floures, leaues and apple.

Chap. XII.

¶ *Of Costus, Spike-nard, and the diuers kindes of Nard.*

BVt the root and leafe be of greatest price in India. And first and formost the root of Costus bites and burns in the mouth; and is of a most excellent and soueraigne smell: for otherwise the branches or body of the shrub is good for little or nothing. In the Island Patale (which lieth at the very first fosse and mouth where the riuer Indus falleth into the sea) there be found two kindes thereof: namely, the black, and the white, which is counted the better. A pound of Costus is held at 16 Roman deniers.

As touching the leafe of Nardus, it were good that we discourse therof at large, seeing that it is one of the principall ingredients aromaticall that go to the making of most costly & precious ointments. The plant it selfe Nardus, hath a massie, heauy, & thick root; but short, black, and brittle, notwithstanding that it be fatty and oleous. Soone it vinoweth and catcheth a kind of mustinesse: and like to the Cypresse [or Cyperus] it hath a sharp taste, rough and smal leaues, but comming thick. The head of Nardus spreads into certain spikes or eares, whereby it hath a twofold vse, both of spike and also of leaf; in which regard it is so famous. A second sort there is of it growing along the riuer Ganges, condemned altogether as good for nothing, for it hath a strong and stinking sauor: whereupon it is called Ozænitis. There is an herbe growing euery where called Pseudonardus, or bastard Nard, which is obtruded vnto vs and sold for the true Spikenard. A thicker leafe it hath and a broader than the other: the colour is more pallat and weak, inclining to white. Also the very root of the right Nard, for to make the better weight, is mingled with gums, with Litharge of siluer, Antimony, or the rind of Cyperus. But the good, sincere, & true Nard is known by the lightnes, red colour, sweet smell, and the taste especially: for it drieth the tongue and leaueth a pleasant rellish behind it. The Spike carieth the price of an 100 Roman deniers a pound. As touching the leaues, the diuersitie thereof makes difference also in the price: for that which hath the larger leaues, and therupon is called Hadrosphærum, is worth 30 deniers a pound. A second sort there is with a smaller leafe, and of a middle size, named therefore Mesosphærum: and that is bought after 60 deniers the pound. But the best of all is that with least leaues, and carrieth the name of Microsphærum: and that the merchant selleth for 75 deniers the pound. What kind soeuer it be, the greener and newer it is, the better is it reputed, and more odoriferous, than that which hath been long kept. Yet say it be old gathered, if the colour hold and keepe well, men preferre it before the blacker, though it bee new. With vs in Italie, and in this part of the World, the leafe of Nardus comming from Syria, is esteemed best: next to it the Celtick, out of France: and in the third place that of Candy, which some name Agrion, [*i.* the wild] others Phu: and this hath a leafe resembling Loueach or Alesanders, a stalke a cubite long full of ioints and knots, of a weake whitish and light purple colour; the root groweth crooked, full of strings and haires hanging to it, and is much like to birds clawes or feet. As for Baccharis, it is called likewise Rustick-nard: but of it will we speak among other floures. Al these kinds of Nardus are to be reckoned herbs, saue that only of the Indians: of which, the Celticke or French Nard, is plucked and gathered together with the root: and for the better preparing thereof, it ought to be well washed and soked in wine, and so dried in the shade out of the Sunne. Then is it made vp into certaine bundels of an handfull apeece, bound vp in papers, and differeth not much in goodnesse from the Indian Spikenard: Howbeit

beit, lighter it is than that of Syria. A pound of it is worth at Rome 13 deniers. The only proof and triall of all their leaues is this, That they be not brittle, and rather ripe drie, than sere or rotten-dry, That they breake not and fall in pieces. With the Celticke and French Nard there euermore groweth another herbe, called Hireulus, and it taketh that name of a strong and Goatish smell which it yeeldeth: besides, so like it is vnto the other, that it is foisted in among the good, and so sold with it. Yet herein is the difference; for that this hath no stem or stalke at all; the leaues thereof also are lesse: and last of all, the root is neither bitter in taste, nor sweet in smell.

Chap. XIII.

¶ *Of Asara Bacca, Amomum, Amomis, and Cardamomum.*

ASarum or Fole-foot, called otherwise, Asara-Bacca, hath the very properties and vertues of Nard: and therefore some haue called it Wild Nard. An herbe it is, carrying leaues like to Iuie, saue that they be more round and softer: it putteth forth a purple floure, and hath a root like vnto the French Nard. The floure is full within of seeds like grape kernels, of an hot taste, and resembling wine. In shadowie mountaines it floures twice a yeare. The best groweth in Pontus, the next to it for goodnesse is found in Phrygia: that of Illyricum is of a third ranke. The root is digged vp when it beginneth to put forth leaues. They vse to dry it in the Sun: soon it wil vennow and be mouldy; quickely also it waxes old, and loses the strength. Of late daies there was an herbe found in Thracia, the leaues wherof differ in nothing from the Indian Nard.

As for the grape of Amomum, which now is in vse and much occupied, some say it groweth vpon a wilde vine in India. Others haue thought, that it commeth from a shrubbe like Myrtle, & carieth not aboue a hand-bredth, or 4 inches in height. Plucked it is together with the root: and gently must be laid and couched in bunches by handfuls, for if great heed be not taken, it will soone burst and breake. The best Amomum and most commendable, is that which carrieth leaues like to those of the Pomegranate, without riuels and wrinckles, and besides, of a red colour. The next in goodnesse is that which is pale. The greene or grasse coloured is not all out so good, but the worst of all is white: and that colour comes by age, and long keeping: a pound of these grapes intire and whole in the cluster, is worth 60 Roman deniers. But if they be crumbled and broken, it will cost but 48. This Amomum groweth likewise in a part of Armenia named Otene: also, in the kingdomes of Media and Pontus. It is sophisticated with the leaues of the Pomgranate, and with some other liquid gum besides, that it may hang vnited together and roll round into the forme of grapes.

Now as touching that which is called Amomis, it is lesse full of veins, and nothing so sweet smelling, but harder than Amomum: whereby it appeareth, that it is either a diuers plant from it, or els if it be the same, it is gathered before it be full ripe.

Cardamomum is like to these aboue rehearsed, both in name, and also in making and forme: but it bears a longer graine for seed. The maner also of gathering and cutting it downe, in Arabia, is the same. Foure kinds there be of it. The first is most green and fatty withal: hauing foure sharp corners, and if a man rub it between his fingers, he shal find it very tough and stubborne: and this is most esteemed of all the other. The next to it is somwhat reddish, but inclining to a whitish colour. A third sort is shorter, lesser, and blacker than the rest. Howbeit, the worst is that which hath fundry colours, is pliable and gentle in the rubbing, and smelleth but a little. The true Cardamomum ought to come neare in resemblance to Costus. And it grows in Media. A pound of the best will cost 12 deniers.

The great affinitie or kinred rather in name, that Cinnamon hath with these spices before rehearsed, might induce me to write therof in one suit, euen in this place: but that more meet it is to shew first the riches of Arabia, and to set down the causes why that country should be syrnamed Happy and Blessed. Wee will begin therefore with the chiefe commodities thereof, namely. Frankincense and Myrrhe: and yet Myrrhe is found as wel in the Troglodites country, as in Arabia.

CHAP. XIV.

¶ *Of Happy Arabia, that yeeldeth plenty of Frankincense.*

THere is no region in the whole world that bringeth forth frankincense but Arabia: and yet is it not to be found in al parts therof, but in that quarter only of the Atramites. Now these Atramites inhabit the very heart of Arabia, and are a county of the Sabæi. The capitall city of the whole kingdom is called Sabota, seated vpon a high mountain: from whence vnto Saba, the only country that yeelds such plenty of the said incense, it is about 8 daies journey. As for Saba (which in the Greek tongue signifieth, a secret mysteric) it regards the Sunne rising in Summer, or the North-East, enclosed on euery side with rockes inaccessible: and on the right hand it is defended with high cliffes and crags that beare into the sea. The soile of this territorie, by report, is reddish, & inclining to white. The forrests that carry these Incense trees ly in length 20 Schænes, and beare in bredth half as much. Now that which we cal Schænus, according to the calculation of *Eratosthenes*, contains forty stadia, that is to say, fiue miles: how soeuer some haue allowed but 32 stadia to euery Schænus. The quarter wherein these trees grow is full of high hills: howbeit, go down into the plains and valley beneath, you shall haue plenty of the same trees, which come vp of their own accord, and were neuer planted. The earth is fat, and standeth much vpon a strong clay, as all writers do agree. Few Springs are there to be found, and those that be are full of Nitre. There is another tract by it selfe confronting this country, wherein the Minæans do inhabit: and through them there is a narrow passage, whereby the frankincense is transported into other parts. These were their first neighbours that did traffique with them for their Incense, and found a vent for it: and euen so they doe still at this day, whereupon the frankincense it selfe is called of their name, Minæum. Setting these people of the Sabeans aside, there be no Arabians that see an Incense tree from one end of the yere to another: neither are all these permitted to haue a sight of those trees. For the common voice is, that there be not aboue 3000 families which can claime and challenge by right of succession that priuiledge to gather incense. And therefore all the race of them is called Sacred and Holy: for looke when they go about either cutting and slitting the trees, or gathering the Incense, they must not that day come neere a woman to know her carnally; nay they must not be at any funerals, nor approch a dead corps, for being polluted. By which religion and ceremonious obseruation the price is raised, and the incense is the dearer. Some say, these people haue equall liberty in common to go into these Woods for their commodities when they will: but others affirme that they be diuided into companies, and take their turns by yeares. As concerning the very tree I could neuer know yet the perfect deseription of it. We haue waged warres in Arabia, and our Roman armie haue entred a great way into that country. *C. Cæsar* the adopted son of *Augustus* wan great honour and glory from thence: and yet verily, to my knowledge, there was neuer any Latine Author, that hath put down in writing the form and fashion of the tree that carrieth incense. As for the Greeke Writers, their bookes doe vary and differ in that point. Some giue out, that it hath leaues like to a Peare tree, only they be somewhat lesse, and when they come forth they be of a grasse green colour. Others say that they resemble the Lentiske tree, and are somwhat reddish. There be again who write, that it is the very Terebints and none else, that giueth the Frankincense: of which opinion king *Antigonus* was, who had one of these shrubs brought vnto him. King *Iuba* in those books which he wrot and sent to *C. Cæsar*, son to the Emperor *Augustus*, (who was inflamed with an ardent desire to make a voiage into Arabia, for the great fame that went thereof) saith, That the tree which beares Frankincense hath a trunke or body writhen about, and putteth forth boughes and branches like for all the world to the Maple of Pontus. *Item*, that it yeeldeth a iuice or liquour as doth the Almond tree; and such are seene commonly in Carmania: as also those in Egypt which were planted by the carefull industrie of the *Ptolomees*, Kings there. Howeuer it be, this is receiued for certaine, that it hath the very barke of a Bay tree: Some also haue said that the leaues be as like. And verily such kind of trees were they which were seen at Sardis: for the Kings of Asia likewise were at the cost and labor to transplant them, and desirous to haue them grow in Lydia. The Embassadours who in my time came out of Arabia to Rome, haue made all that was deliuered as touching these trees more doubtfull and vncertaine than before. A strange matter, and wonderfull indeed, considering that twigges and branches of the Incense tree haue passed betweene:

by

by the veiw of which impes, we may judge what the Mother is: namely, euen and round in the bodie, without knot or knar, and from thence she putteth out shoots.

They vsed in old time to gather the Incense but once a yere; as hauing little vent, and small returne, and lesse occasion to sell than now adaies: but now, since euery man calleth for it, they feeling the sweetnesse of the gaine, make a double vintage (as it were) of it in one yere. The first, and indeed the kindly season, falls about the hottest daies of the Summer, at what time as the Dog daies begin: for then they cut the Tree where they see the bark to be fullest of liquor, and wheras they perceiue it to be thinnest and strut out most. They make a gash or slit only to giue more libertie: but nothing do they pare or cut cleane away. The wound or incision is no sooner made, but out there gusheth a fat some or froth: this soone congeales and growes to be hard: and where the place will giue them leaue, they receiue it in a quilt or mat made of Date tree twigs, plaited and wound one within another wicker-wise. For elsewhere, the floore all about is paued smooth, and rammed downe hard. The former way is the better to gather the purer and clearer Frankincense: but that which falleth vpon the bare ground, proones the weightier. That which remaines behind, and stickes to the Tree, is parted and scraped off with knives, or such like yron tooles; and therefore no maruell if it be ful of shauings of the bark. The whole wood or forrest is diuided into certaine portions: and euery man knowes his owne part: nay, there is not one of them will offer wrong vnto another, and encroch vpon his neighbors. They need not to set any keepers to look vnto those Trees that be cut, for no man will rob from his fellow if he might, so just and true they be in Arabia. But beleeue me, at Alexandria where Frankincense is tried, refined, and made for sale, men canot look surely enough to their shops and work-houses, but they will be robbed. The workeman that is emploied about it, is all naked, saue that he hath a paire of trouses or breeches to couer his shame, and those are sowed vp and sealed too, for feare of thrusting any into them. Hood-winked he is sure ynough for seeing the way to and fro, and hath a thicke coife or maske about his head, for doubt that he should bestow any in mouth or eares. And when these workmen be let forth againe, they be stripped starke naked, as euer they were borne, and sent away. Whereby we may see, that the rigor of justice canot strike so great feare into our theeues here, and make vs so secure to keepe our owne, as among the Sabæans, the bare reuerence and religion of those woods. But to returne againe to our former cuts. That Incense which was let out in Summer, they leaue there vnder the Tree vntil the Autumne, and then they come and gather it. And this is most pure, cleane, and white.

A second Vintage and gathering there is in the Spring: against which time, they cut the bark before in the Winter, and suffer it to run out vntil the Spring. This comes forth red, and is nothing comparable to the former. The better is called Carpheotum, the worse, Dathiathum. Moreouer, some say, that the gum which issueth out of the young trees is the whiter: but that which comes from the old, is more odoriferous. There be others also of opinion, that the better Incense is in the Islands. But King *Iuba* doth auouch constantly, that there is none at all in the Islands. That which is round like vnto a drop, and so hangeth, we call the male Incense; wheras in other things lightly we name the male, but where there is a female. But folk haue a religious ceremonie in it, not to vse so much as the tearme of the other sexe, in giuing denomination to Frankincense. Howbeit, some say, that it was called the Male, for a resemblance that it hath to cullions or stones. In very truth, that is held for the cheife and best simply, which is fashioned like to the nipples or teats that giue milk, standing thick one by another: to wit, when the former drop that distilled, hath another presently followeth after, and so consequently more vnto them, and they all seeme to hang together like bigs. I read, that euery one of these were wont to make a good handfull, namely, when men were not so hasty & eager to carry it away, but would giue it time and leisure to drop softly. When it is gathered in this sort, the Greeks vse to call it Stagonias and Atomus: but the lesser goblets they name Orobias. As for the small crums or fragments which fall off by shaking, wee called Manna, [*i. Thuris.*] And yet there be found at this day drops of Incense that weigh the third part of a pound, that is to say, about * 39 Roman deniers. It happened on a time, that king *Alexander* the Great being then but a very little child, made no spare of Incense, but cast still vpon the altar without all measure when he offered sacrifice. Whereupon, *Leonides* his tutor and schoole maister, by way of a light reproofe, said vnto him thus, Sir you should in that maner burne Incense when you haue once conquered those nations where there growes Incense. Which rebuke and checke of his tooke so deep a print in

* or rather 33 and a scruple.

Alexander's

Alexanders heart, and ſo well he carried it in memorie, that after he had indeed made conqueſt G
of Arabia, he ſent vnto the ſaid *Leonides* his Tutor, a ſhip ful fraught and charged with Incenſe;
willing him not to ſpare, but liberally to beſtow vpon the gods when hee ſacrificed. To returne
againe to our hiſtorie. When the Incenſe is gathered (as is beforeſaid) conueighed it is to Sa-
bota, vpon Cammels backs, and at one gate (ſet open for that purpoſe) is it brought into the ci-
tie. For by law forbidden it is on pain of death, to take any other way. Which done, the Prieſts
there of the god whom they call *Sabis*, take the diſme or tenth part of the Incenſe, by meaſure,
and not by weight, and ſet it apart for that god. Neither is it lawful for any man to buy or ſell,
before that duty be paied: which ſerues afterwards to ſupport certaine publick expenſes of the
citie. For al ſtrangers and trauellers within the compaſſe of certain daies journey, if they come
to the citie, are courteouſly receiued, and liberally entertained at the coſt and charge of the ſaid H
god *Sabis*. Caried forth of the country it cannot be, but thorough the Gebanites: and therfore
there is a cuſtome paid to their king. The head citie of that kingdome, Thomna, is from Gaza
(the next port-towne in Iudæa toward our coaſt) ſeuen and twentie miles fourſcore times told:
and this way is diuided into 62 daies journy by Camels. Moreouer, beſides the tyth aforeſaid,
there be meaſures beſtowed vpon the Prieſts to their owne vſe: and others likewiſe to the kings
Secretaries and Scribes. And not only theſe haue a ſhare, but alſo the Keepers, Sextons, and
Wardens of the temple, the Squires of the bodie, the Guard and Penſioners, the kings officers,
the Porters, Groomes, and other ſeruitors pill and poll, and euery one hath a ſnatch. Moreouer,
all the way as they trauell; in one place they pay for their water, in another for fodder and pro-
uender, or elſe fortheir lodging & ſtable-room, & euery where for one thing or other they pay I
toll: ſo as the charge of euery Cammell from thence to the ſea vpon our coaſt, commeth to 688
deniers: and yet we are not come to an end of paiments. For our Publicanes and cuſtomers alſo
belonging to our Empire, muſt haue a fleece for their parts. And therefore a pound of the beſt
Incenſe will coſt 16 deniers: of the ſecond 15: and the third 14. With vs it is mingled and ſo-
phiſticated with parcels of a white kind of Roſin which is very like to it: but the fraud is ſoone
found, by the meanes aboue ſpecified. The beſt Incenſe is tried and knowne by theſe markes,
viz. If it be white, large, brittle, and eaſie to take a flame when it comes neare a coale of fire;
laſt of all, if it ſtill not abide the dent of the tooth, but flie in pieces and crumble ſooner than
ſuffer the teeth to enter into it.

K

Chap. XV.

¶ *Of Myrrhe, and the Trees that yeeld it.*

SOme haue written, That the Trees which beare the Myrrhe, doe grow confuſedly here and there in the ſame woods, among the Incenſe Trees: but more there are who affirme, That they grow apart by themſelues. And in truth, found they are in many quarters of Arabia, as ſhall be ſaid when we treat of the ſeuerall ſpecies of Myrrh. There is very good Myrrh brought out of the Iſlands: and the Sabæsns paſſe ahe ſeas, and trauell as far as to the Troglodites coun-
trey for it. There is a kind of Myrrhe tree planted by mans hand in Hort-yards, and much pre-
ferred it is before the wild that groweth in the woods. Theſe Trees loue to be raked, bared, and L
cleanſed about the roots: they delight (I ſay) to haue the ſuperfluous ſpurnes rid away from
the root: and the more that the root is cooled, the better thriueth the Tree. The plant groweth
ordinarily fiue cubits high, but not all that length is ſmooth and without pricks: the bodie and
trunke is hard and wrythen, thicker than the Incenſe trees: it is greateſt toward the root: and ſo
ariſes ſmaller and ſmaller, taperwiſe. Some ſay, that the bark is ſmooth and euen, like vnto that
of the Arbute Tree: others againe affirme, that it is prickly and full of thornes. It hath a leaſe
like to the Oliue, cut more criſped and curled, and withall it is in the end ſharp-pointed like a
needle. But King *Iuba* writes, that it beareth the leafe of Loueach or Aliſanders. There be who
write, that it reſembles the Iuniper, ſaue only that it is more rough and beſet with ſharp pricks
And ſome let not to dream & talke, that both Myrrhe and alſo Incenſe came from one and the M
ſame Tree. Indeed, the Myrrhe trees are twice cut and launced in one yeare, and at the ſame ſea-
ſons, as wel as the Incenſe trees: but the ſlit reacheth from the very root vp to the boughes, if
they may beare and abide it. Howbeit, before that inciſion be made, they ſweat out of them-
ſelues a certain liquor called Stacte, which is very good Myrrh, and none better. As wel of this
franke

A franke and garden myrrh tree, as of the wild in the woods, the Myrrh is better that is gathered
or runs in Summer time. There is no allowance of myrrh offered and giuen to the god *Sabis*, as
there was of Incenſe, becauſe it is found in other countries. Howbeit the King of the Geba-
nites hath payed vnto him for toll and cuſtome a fourth part of all that paſſeth through his
kingdome. To conclude, whatſoeuer is bought in any market or place abroad, they put and
thruſt it hard together in leather bags one with another: but the Druggiſts and Apothecaries
can ſoon ſeparate the better from the worſe, and be very cunning and ready to digeſt them ac-
cording to the marks that they go by, as well of ſmell as fattineſſe.

Chap. XVI.

B ¶ *Diuers kindes of Myrrhe: the nature, vertue, and price thereof.*

MAny ſorts there be of Myrrh. Of all the wild kinds, the firſt is that which groweth in the
Troglodites country. Next to it is Minæa, in which rank you may place Attramittica
and Auſaritis, which both come out of the realme of the Gebanites. In a third place
reckon that which they call Dianitis. A fourth ſort is gotten here and there in all parts, and
hudled together. In the fift range is Sembracena, ſo called of a city within the kingdom of the
Sabæans, and is next vnto the ſea. The ſixt they call Duſaritis. Beſides all theſe, a white myrrh
there is found but in one place, which ordinarily is brought to the city Meſalum, & there ſold.
The Trogloditicke myrrh they chuſe by the fattineſſe thereof, and for that it ſeemes to the eye
C greener: it ſhewes alſo foule, rude, and ilfauoured: but ſharper it is, and more biting in mouth
than the reſt. The Sembracene hath none of theſe faults, but is pleaſant and cheerful to ſee to,
howbeit of ſmall operation and ſtrength. But to ſpeake in a word, and once for all, the beſt
myrrh is known by little pieces which are not round: and when they grow together, they yeeld
a certain whitiſh liquor which iſſueth and reſolueth from them, and if a man break them into
morſels, it hath white veines reſembling mens nailes, and in taſte is ſomewhat bitter. A ſe-
cond degree there is in goodnes, when it ſheweth ſundry colors within. And the worſt of all is
that which within-forth is black; and the ſame is worſe yet, if it be as black without. As tou-
ching the price of myrrh, it alters as it is more or leſſe in requeſt, and according as it meeteth
with many or few chapmen. For ye ſhal haue Stacte ſold ſomtimes for 6 deniers a pound, and
D otherwhiles for 50. The greateſt price of the garden frank-Myrrh, or that which is ſet by mans
hand is 22 deniers. The red called Erythrea is neuer aboue 16: and this is taken to be the true
myrrh of Arabia. The kernell within of the Trogloditicke Myrrh will coſt 13 deniers a pound:
but that which they call * Odoraria is ſold for 14. All kinds of Myrrh be mingled and ſophi- * or *Adoraria*
ſticated with pieces of Maſticke comming from the Lentiske, and with other gum: *Item* with *i.* Suaueolã, which ſerued
Elaterium [*i.* the iuice of the wild cucumber] to make it more bitter: as alſo, that it might ſeem for perfuming
weightier, with the ſome of lead, or litharge of ſiluer. And ſurely ſetting aſide theſe two cor- in temples.
ruptions, all the reſt are found by the very taſt of the gum, which alſo will ſticke vnto the teeth
in the chewing. But the craftieſt and fineſt deuice to counterfeit it, is with Indian myrrh, ga-
thered there from a certain thorny plant which growes among them. This is the onely thing
E that India bringeth forth worſe than other countries. And verily ſo bad it is, that ſoone it may
be knowne from other myrrhes.

Chap. XVII.

¶ *Of Maſtick, Ladanum, and Bruta of Enhæmus, Strobus, and Styrax.*

FRom the foreſaid Myrrh therefore laſt named, let vs for the affinitie paſſe to Maſtick: which
comes alſo of another thorny tree in India, as alſo in Arabia, called Lama. Howbeit of
Maſtick there be two ſorts: for both in Aſia and alſo in Greece there is found an hearbe,
which directly from the root putteth forth leaues, and it beareth a bur or thiſtle head like an
F apple, full of ſeeds. Cut the top of this herbe, and there will iſſue forth a certain liquor ſo like
vnto the right maſtick, that hardly a man ſhall know the one from the other. Ouer and beſides,
there is a third ſort of Maſticke in Pontus, more like to Bitumen. Howbeit, the very beſt Ma-
ſtick is brought out of the Iſland Chios, and the ſame is white, and a pound of it is worth in
Rome 20 deniers: but the black ye ſhall buy for twelue. As for the Chian Maſticke, it iſſueth
forth

forth as a gum out of the Lentisk tree. Mingled this is also like as frankincense, with rosin. G

Moreouer, Arabia doth glory euen yet in their Ladanum. And many haue reported, that this comes by fortune or chance, and by occasion of violence and wrong done to an odoriferous plant that yeeldeth it in this manner following: The Goats they say, harmefull creatures as they be to all plants, but more desirous to be brousing of sweet and aromaticall shrubs (as if they knew how precious they were) vse to crop the sprouts and sprigs of this plant which beareth Masticke; which being so full of this odoriferous and sweet liquor, that they smel again, doth drop and distill the said moisture, which the shrewd and vnhappy beast catcheth among the shag long haires of his beard. Now by reason that dust getteth among, it baltereth & cluttereth into knots and balls, and so is concocted into a certaine consistence in the Sunne. And hereupon it is, that in Ladanum are found goats haires. But this hapneth by their saying, in no H
other place but among the Nabatæans in the frontiers of Arabia toward Syria. The later moderne writers call the plant which yeeldeth Ladanum, Strobos: and they affirme, That in the forrests of Arabia where these do grow, the boughes are much broken by the brousing of these goats, and so the iuice and liquor stickes to their locks and beards. But the true Ladanum (say they) is peculiar to the Island Cyprus (for, giue me leaue I pray you, to speake by the way of euery kind of spice and aromaticall drugs, & not strictly to keep & obserue the order & consequence of places where they be found.) And by report, after the same manner as this Ladanum in Arabia, there hangeth and cleaueth to the beards and shagge haired legs and flankes of the goats there also, a certain grease and fattinesse called Oesypus: but, according to them, it must be gotten when they crop off the leaues and floures of the herbe Cistus, in a morning for their I
breakefast, at what time as the Island Cyprus standeth all with a dew. Now when the morning mist is dispatched by the heat of the Sunne, there gathereth dust amongst these moist and wet haires of theirs, and sticketh to: and then the Islanders come and comb from their beards and flanks that which the call Ladanum. Some call that plant in Cyprus whereof it is made, Ledon: and in truth thereof it taketh the name of Ledanum amongst them. For by their report, this herbe hath a fatty substance setling vpon it, and the peasants of the countrey roll the herbs together into balls or rundles, with small cords, and so make vp those little lumpes ye see. By which we may perceiue, that as well in Arabia as Cyprus there be two kinds of Ladanum: the one mixed with earth, and naturall of it selfe: the other brought into balls and artificiall. The earthy is brittle and will crumble: the artificiall is tough, clammy, and will cleaue to ones fingers. Moreouer, it is said that there be certain shrubs in Carmania that beare Ladanum, as also K
about Egypt, by occasion of plants thither brought by the *Ptolomæi*, kings of Egypt: or as some say it is the Incense tree that bringeth it forth: and is gathered after the manner of a gum issuing out of the tree by incision made in the barke, and is receiued in goat skins. The best Ladanum is worth forty Asses a pound. Sophisticated it is with Myrtle berries, and with other filth of beasts. The good Ladanum indeed, which is of it selfe without other mixture, ought to haue a wild and sauage smell with it, as if it came out of a wildernesse. Greenish it is, and drie to see to: but handle it neuer so little, and presently it doth relent and wax soft. Set it on fire, and it burneth bright and cleare, and then it casts a sweet and pleasant odour. But all that is counterfeit and mixed with myrtle berries may soon be knowne, for they will crackle in the L
fire. Besides, the true Ladanum hath rather stony grit comming from the rockes, mingled with it, than dust.

In Arabia, the Oliue tree also hath a kind of liquour which issueth out of it: and thereof is compounded a certain soueraign salue named of the Greeks Enhæmon, which is singular good to draw vp wounds and heale them clean. In the maritime parts and sea coasts the said Oliue trees at some tides are ouerflowed with the waues. Yet receiue the Oliue berries no hurt thereby: notwithstanding it be certain, that the sea doth leaue salt vpon the leaues. Thus you see what be the peculiar commodities as touching trees, proper vnto Arabia. True it is that it hath others besides, but because they be found elsewhere, and knowne to be better in other places than in Arabia, I will treat of them in their course and ranke when it commeth. And yet Ara- M
bia it selfe, as fruitfull and happy as it is in this behalfe, is wondrous eager in seeking after forreine spices, and sendeth for them into strange countries. So soone are men glutted and haue their fill of their owne: and so greedy and desirous be they of other countries commodities.

They

A They send therfore as far as the Helymæans, for a tree named Bruta, like to a spreding cypres, hauing boughes couered with a whitish bark, casting a pleasant smelling perfume when it burneth, and highly commended in the chronicles and historie of *Claudius Cæsar* for strange vertues and wonderfull properties. For he writeth, That the Parthians vse to put the leaues therof in their drinke, for to giue it a good taste and odoriferous smell. The odour thereof resembleth the Cædar very much: and the perfume is a singular remedie against the stinking and noisome fumes of other wood. It groweth beyond the great channell of the riuer Tigris, called Pasitigris, vpon the mount Zagrus neare vnto the citie Citaca.

They send moreouer to the Carmanians for another tree called Strobos, and all to make sweet perfumes: but first they infuse the wood thereof in Date-wine, and then burn it. This is an
B excellent perfume: for it wil fill the whole house, rising vp to the chambers aloft to the arched seelings of the rouse, and returning downe againe to the very floore and ground beneath, most pleasantly. But it stuffes a mans head, howbeit without any paine or ach at all. With this perfume they procure sleep to sick persons. And for the traffick of this commodity, the merchants meet at the citie Carras, where they keep an ordinarie faire or mart: and from thence they went customably to Gabba, twentie daies journey off, where they were wont to haue a vent for their merchandise, and to make returne: and so forward into Palestine of Syria. But afterwards (as K. *Iuba* saith) they began to go to Charace, and to the kingdom of the Parthians, for the same purpose. For mine owne part, I thinke rather with *Herodotus*, That the Arabians transported these odours and spices to the Persians first, before that they went therewith either into Syria or Æ-
C gypt: and I ground vpon the testimonie of *Herodotus*, who affirmeth, That the Arabians paid euery yeare vnto the KK. of Persia the weight of a talent in Frankincense, for tribute.

Out of Syria they bring back Storax, with the acrimonie and hot smell wherof, being burnt vpon the ir herths, they put by and driue away the loathsomnesse of their own odors, wherewith they are cloyed: for the Arabians vse no other fuell at all for their fires; but sweet wood. As for the Sabæans, they seeth their meats in the kitchin, some with the wood of the Incense tree, and others with that of Myrrhe: insomuch as both in citie and country their houses be full of the smoke and smell thereof, as if it came from the sacrifice vpon the altars. For to qualifie therefore this ordinarie sent of Myrrhe and Frankincense wherewith they are stuffed, they perfume their houses with Storax, which they burne in Goats skins. Loe, how there is no pleasure whatsoeuer but breedes lothsomnesse, if a man continue long to it. The same Storax they vse to burn
E for the chasing away of Serpents, which in those forests of sweet trees, are most rife & common.

Chap. XVIII.

¶ *Of the felicitie of Arabia.*

NEither Cinamon nor Casia do grow in Arabia, and yet is it named Happie: vnworthie countrey as it is, for that surname, in that it taketh it selfe beholden to the gods aboue therefore, whereas indeed they haue greater cause to thanke the infernal spirits beneath. For what hath made Arabia blessed, rich, and happie, but the superfluous expense that men be at, in funerals; employing those sweet odors to burne the bodies of the dead, which they knew
F by good right were due vnto the gods. And verily it is constantly affirmed by them who are acquainted well with the world, and know what belongeth to these matters, That there commeth not so much Incense of one whole yeares increase in Saba, as the Emperor *Nero* spent in one day, when he burnt the corps of his wife *Poppæa*. Cast then, how many funerals euery yeare after were made throughout the world: what heaps of odors haue been bestowed in the honor of dead bodies: wheras they offer vnto the gods by crums and graines only. And yet when as men made supplication to them with the oblation of a little cake made with salt, and meale, and no more; they were no lesse propitious and merciful, nay they were more gratious and fauourable a great deale, as may appeare by histories. But to returne againe to Arabia, the sea enricheth it more than the land, by occasion of the orient pearles that it yeeldeth and sendeth vnto vs. And sure-
D ly our pleasures, our delights, and our women together, are so costly vnto vs, that there is not a yeare goeth ouer our heads, but what in pearles, perfumes, and silkes; India, the Seres, and that demy-Island of Arabia, stands vs at the least in an hundred millions of Sesterces, and so much fetch they from vs in good money, within the compasse of our Empire. But of al this masse of

Spice

Spice and Odors, how much (I pray you) commeth to the seruice of the cœlestiall gods, in comparison of that which is burnt at funerals, to the spirits infernall? G

Chap. XIX.

¶ *Of Cinamon, and the wood thereof called Xylocinnamomum. Also of Canell or Casia.*

FAbulous antiquitie, and the prince of lyers *Herodotus*, haue reported, That in that tract where *Bacchus* was nourished, Cinamon and Canell either fell from the nests of certaine fowles, and principally of the Phœnix, thorough the weight of the venison and flesh which they had preyed vpon and brought thither whereas they builded in high rockes and trees; or H
else was driuen and beaten downe, by arrowes headed with lead. Also that Canell or Casia was gotten from about certaine marishes, guarded and kept with a kind of cruell Bats, armed with terrible and dreadfull tallons, and with certain flying Pen-dragons. And all these deuises were inuented only to enhaunce the price of these drugs. And this tale is told another way, namely, That in those parts where Canell and Cinamon grow (which is a country in manner of demy-Island, much enuironed with the sea) by the reflection of the beames of the Noon-sun, a world of odoriferous smells is cast from thence, in such sort, that a man may feele the sent at one time of all the aromaticall drugs as it were met together, and sending a most fragrant and pleasant sauour far and neare: and that *Alexander* the Great sailing with his fleet, by the very smell alone discouered Arabia a great way into the maine sea. Lies all, both the one and the other: for Ci- I
namone or Cinamon, call it whether you will, groweth in Æthiopia, a countrey neare vnto the Troglodites, who by mutuall marriages are linked together in great affinity. And in very truth the Æthiopians buy vp all the Cinamon they can of their neighbours, and transport it into other strange countries ouer the vast Ocean, in smal punts or boats, neither ruled with helme and rudder, nor directed to and fro with ores, ne yet caried with sailes or any such meanes of nauigation: one man alone shall see you there in a boat, armed and furnished with boldnesse only in stead of all, to hasard himself and his goods in the surging sea. These fellowes, of all times of the yeare, take the dead of the winter, and then (to chuse) they will venter to crosse the seas for their voyage, when the Southeast winds are aloft & blow lustily. These winds set them forward in a streight and direct course thorough the gulfes; and after they haue doubled the point of K
Argeste, and coasted along, bring them into the famous port or hauen-towne of the Gebanites, called Ocila. And albeit this voiage be long & dangerous (for the merchants hardly can return in fiue yeres, and many of them miscarie by the way) yet by report they are nothing dismaied and daunted therwith, but willingly aduenture still. And being at Ocila, what thinke you doe they exchange for, and wherewith fraight they their vessels back againe homeward? euen with glasses, vessels of copper and brasse, fine cloth, buckles, clasps, and pincers, bracelets and carcanets, with pendant jewels: so as a man would verily thinke, that this trafficke were maintained and the voiages enterprised vnder the credit & for the pleasure of womankind especially. Now as touching the plant that bears Cinamon, the tallest is not aboue 2 cubis high aboue ground, nor the lowest vnder one hand-breadth or 4 inches: in compasse about 4 fingers thicke: immediatly from the earth it putteth forth twigs, and is full of branches of fix fingers length, but it L
looketh as if it were drie and withered: whiles it is greene it yeelds no smell at all, and the leaf resembleth Origan: it loues drought, for in rainie weather it is lesse fruitfull, and yet it is of this nature, To be cut as a coppis. It will grow verily in plaines, but gladly it would lodge among the thickest rough of bushes, greeues, & briers that are to be found: so as men haue much adoe to come by it and to gather it: but neuer is cut or cropped without especiall permission of a certtaine god, which they take to be *Iupiter*; and this patron of the Cinamon tree, they call *Assabinus*. To obtaine leaue and license so to do, they are glad to sacrifice the inwards of 44 Kine or Oxen, Goats also and Rams: and when they haue all done, yet permitted they be not to go about this businesse either before the Sun rising, or after his setting. Now when these twigs M
and branches be cut, the Sacrificer or Priest diuides and parts them with a jauelin, and sets by one portion for the god abouesaid: the rest doth the merchant put vp and bestow in paniers for the purpose. This manner of diuision is otherwise reported; namely, That the whole heap is cast into three parts, whereof the sunne hath one for his share: but they draw lots first for euery one

A one of these trees seueral bundles or parcels of Cinnamon sticks; and that which falleth to the Sun is let alone and left behind: but of the own accord it catcheth a light fire and burneth. The best Cinamon is thought to be that which growes about the slendrest sticks, for the length of an hand bredth from the vpper end. The second sort in goodnesse is that which is next it, and somwhat lower, but it beareth not full so much as an hand bredth; and so consequently in order by degrees downward; for the worst and of least price is that which is neerest the root, because there is least barke, the chiefe thing required in Cinamon: which is the cause that the twigs in the tree top are preferred before the rest, for that in them there is most barke. As for the very wood it selfe, which is called Xylocinamonum, there is no reckoning made of it, because of the acrimonie and sharpenesse that it hath, resembling Origan. A pound thereof is worth 20 deniers. Of Cinamon there be (according to some) two kinds; to wit, the whiter and
B the blacker. In times past, the white was in more request: but now adaies the black is most set by: yea, and that of diuers colours is better esteemed than the white. But the truest marke indeed to chuse the best, is to see that it be not rough, and that it crumble not quickely if one piece be rubbed against another. That which is tender and hath besides a white bark, is not regarded at all, but condemned for the worst. Moreouer, this is to be noted, that the King onely of the Gebanites setteth the price and sale of Cinamon: he it is that selleth it in open market according as it is by him taxed. In old time a pound of it was sould for 1000 deniers, and this price afterward rose higher by one halfe, by reason that the forrests of Cinamon were (as men say) burnt by the barbarous Troglodites their neighbors in their furious wrath. Now why it should be so deare, no man certainly knows: whether it were through the great rich merchants
C who ingrossed all into their hands by way of monopoly, or by some other casualtie and chance of fire aforesaid. But true it is and well knowne by that we find in diuers writers, That there be such hot Southerne windes blowing in those parts, that in Summer many times they set the woods on fire. *Vespasian Augustus* the Emperor was the first that dedicated in the Temples of the Capitoll and goddesse *Peace*, garlands and chaplets of Cinamon enclosed within fine polished gold. In that temple which the Empresse *Augusta* caused to be built in the palace vpon Mount Palatine, for the honor of *Augustus Cæsar* late Emperor, her husband, I haue my self seen a Cinamon root of great weight, set in a cup of gold, which yearely did put forth certain drops which congealed into hard grains. That monument remained there to be seen, vntill the Temple and all was consumed by fire.

E As concerning Casia or Canell, a plant it is, which groweth neer to the plains from whence the Cinamon comes; but it loueth to liue vpon mountaines, and beareth a bigger and rounder wood in the branches than the Cinamon, and hath a thin rinde or skin, more truly than a bark: the slenderer that the same is, and lighter, the more reckoning is made of it; clean contrary to the Cinamon. This shrub that beareth Casia groweth to the height of 3 cubits: and 3 colours it carieth; for when it comes vp first, for a foot from the root it is white: then as it shooteth halfe a foot higher it waxeth red: but as it riseth farther it is blackish: and this part is held for the best; and so the next to it in a degree lower: but the white is of no regard at all, and therefore they neuer cut the twigs and branches neere the root, nor aboue two cubits in length. And when they haue cut them in this manner, they presently sow them vp in greene skinnes of
F four-footed beasts, killed new and fresh for that purpose, that of their corruption and putrefaction there might breed certaine wormes to eat out the wood within the barke, and so make it hollow; for the bark is so bitter that the worm will not touch it. The newest and freshest Canell is reputed best, and that which hath a most delicate smell; very hot in the mouth, and burning the tongue, rather than gently warming it without any great biting. Such Canell is of a purple colour, and very light in hand; which seeming much to the eye, yet weigheth little: besides, the pipes be but short, and the outward rinde or coat is not brittle and easie to fall in pieces. This elect and choice Canell the barbarous people call Lacta. Another sort there is named Balsamodes, because it hath a smell resembling Balm: bitter it is in the mouth, & therefore of more vse in physicke; like as the blacke is most imployed in sweet perfumes and ointments. There is no drugs that varieth more in price than the Canell: for whereas the best will cost fifty deniers Romana pound; all the rest a man may buy for fiue.

Chap. XX.

¶ *Of Isocinnamon, Cancamum, and Tarum.*

THe Huckſters and regraters that buy and ſell againe haue another kinde, which they call Daphnoides, and they ſyrname it Iſo-cinnamon: and ſurely they hold it at 300 deniers a pound. Mingled it is and made counterfeit with Storax; with the ſmalleſt and tendreſt branches alſo of Lawrell, for the likeneſſe it hath to the bark therof. Moreouer, it is ſet & planted in our part of the world here in Italy, alſo in the vtmoſt marches and confines of our Empire, along where the riuer Rhine runs, it liueth, being ſet neere vnto Bee-hiues. Howbeit, becauſe it wants the parching heate of the Sun, it is nothing ſo deepe coloured; and thereupon alſo it comes ſhort of the ſmell that the other hath. Out of the regions which bound on thoſe parts where Caſia and Cinamon groweth, there are brought ouer vnto vs two other ſpices, called Concamum and Tarum: but by the way of the Troglodite Nabathæans, who onely of the antient Nabathæans there ſetled and remained,

Chap. XXI.

¶ *Of Serichatum, Gabalium, and Myrobalanum,* [i. *Ben.*]

IN the ſame country, the Arabians come charged alſo with Serichatum and Gabalium: but they make an hand with it among themſelues, and ſpend it quite: in ſuch ſort, as their drugs are known only in name to vs in this part of the world, albeit they grow together with Cinamon and Caſia. And yet otherwhiles there is Serichatum brought vnto vs, which ſome perfumers vſe to put into the compoſition of ointments. And a pound of it is commonly exchanged for ſix deniers.

As for Myrobalanon, [*i. Behen*] it growes ordinarily in the region of the Troglodites, about Thebais, and that part of Arabia which diuideth Iury from Egypt: a drug that Nature hath brought forth only for ointment, as the very name giueth it. Whereby it appeareth alſo, that it is a very nut of a certain tree, which beareth leaues like to Heliotropium: whereof we wil ſpeak among other herbs. The fruit that this plant beareth is about the bignes of a filberd nut. That which growes in Arabia, and yet called Syriaca, is white: but contrariwiſe that about Thebais is black. The former of theſe two is commended for the goodneſſe of the oile which is preſſed out of it: but the Thebaick Ben is in greater requeſt for the plenty that it yeeldeth. As for the Troglodiick, it is the worſt of all, and the cheapeſt. And yet ſome there be that preſer the Æthiopian Ben before all other. The Nut and fruit thereof is black and fat, with a ſmal and ſlender kernell within: howbeit the liquor preſſed forth of it is more odoriferous: and it groweth in champian countries and plains. It is affirmed moreouer, that the Egyptian Ben is more oleous and fat, hauing a thicker ſhell, and the ſame red. And albeit that it grow in mariſh ground, yet is it a ſhorter plant and more dry than the others. But contrariwiſe they ſay, that the Arabick is green of colour, and thinner in ſubſtance: and for that it groweth vpon the mountaines it is more maſſie and weighty. But the beſt ſimply by many degrees, is that Ben which is called Petræa, comming from about the town abouеſaid; with a blackiſh rind, & white kernel. Now the Perfumers and Apothecaries, do preſſe only the husks and ſhels; but the Phyſitians extract an oile out of the very kernels, which as they ſtamp, they poure hot water euer and anon vnto it, by little and little.

Chap. XXII.

¶ *Of Phœnicobalanus, Calamus odoratus, and Squinanth.*

THe Date in Egypt called Adipſos hath the like vſe in ointments, and is next in requeſt for ſuch odoriferous compoſitions, as the Myrabalanus, or Ben aforeſaid. Green it is in colour, it ſmelleth like vnto a Quince, and hath no wooddy ſtone within. But to ſerue for thoſe purpoſes aboue recited, it muſt be gathered ſomewhat before it beginneth to ripen. That which is left behinde vngathered is called Phœnicobalanus. This waxeth blacke, and maketh them drunke that eat thereof. As for Myrobalanus, or Ben, it is worth two Romane deniers a pound.

pound. The occupiers and ſhopkeepers call the very ſetling and grounds of their ointment and compoſitions, by the name of Myrobalanon.

Moreouer, within Arabia there growes alſo the ſweet Calamus, which is common to the Indians & Syrians likewiſe. That of Syria paſſes all the reſt, and comes vp in a tract of that countrey, diſtant from the coaſt of our Sea fiftie ſtadia. Between mount Libanon, and another mountain of no account [for it is not Antilibanon as ſome haue thought] in a little vale beneath neer vnto a lake, the marſhes and flats whereof are drie in Summer for the ſpace of thirtie ſtadia, there grow both ſweet Calamus, and alſo Sqinanth or Iuncus Odoratus, [*i.* the Sweet-ruſh.] For let vs ſpeak alſo in this place of the ſaid Scænanth: and although it be but a ruſh, and another booke is appointed for the treatiſe and hiſtorie of ſuch Hearbes, yet becauſe we handle the *Species* that go to the compoſition of ſweet Perfumes, Pomanders, & ointments, I canot paſſe it ouer. Well then, neither the one nor the other of theſe twaine, differ in ſight from the reſt of that kind. But Calamus is the better of the twaine, and hath a more pleaſant ſmell; for a man may wind the ſent of it preſently a great way off: beſides, it is ſofter in hand: and better is that which is leſſe brittle, and breaketh in long ſpils and ſhiuers, rather than knappeth off like a Radiſh root. Within the pipe of this reed, there lieth a certaine matter like vnto a Spiders-web, which the Apothecaries call the flower of it, and that Calamus is counted better, which hath more in it of theſe floures. There is another mark alſo of good Calamus, namely, if it be black: and yet in ſome place, they make no reckoning of the blacke Calamus. But in a word, the ſhorter and thicker that the reed is, the better is the Calamus: and the ſame is more ſupple and pliable when a man would breake it. As for Calamus, it is worth eleuen deniers the pound: but Squinanth is ſold for fifteen. Moreouer, ſome ſay that there is a ſweet ruſh or Squinanth found in Campania And now are we gone from thoſe lands that coaſt vpon the deep ocean, and come to thoſe that confront and lie vpon our Mediteranean ſeas.

Chap. XXIII.

¶ *Of Hammoniacum, and Spagnum.*

TO begin withall, in the ſands of thoſe parts of Affrick, which lie vnder Æthiopia, there is a liquor diſtilleth, called in Greeke *Hammoniacum*, of *Hammon*, which ſignifieth Sand, and the Oracle of *Iupiter Hammon*, for neare vnto the temple where the ſaid Oracle returnes Anſwers, there grow certaine trees within the ſands, which they call Metopia, from which, Hammoniacum droppeth in manner of a roſin or gum: and of it there be two kinds: the one is named Thrauſton, like vnto the male or better Frankincenſe, and is moſt eſteemed: the other is fat and full of roſin, and they cal it Phyrama. The manner to ſophiſticate Hammoniacum, is with ſand, to make men beleeue that it grew among the ſands, and gathered it in the growing and comming vp: and therefore the good Ammoniacum is known when it is in leaſt morcels, and thoſe very cleare. The price of the beſt is after fortie aſſes the pound.

Beneath theſe quarters, and within the prouince Cyrenaica, there is found a paſſing ſweet Moſſe, called Sphagnos; and of ſome Bryon [aromaticum.] Of all ſuch Moſſes, this is thought to be the beſt. Next vnto it, is that of Cyprus: and in a third ranke, the moſſe which groweth in Phœnicia. There is ſuch Moſſe (by report) in Ægypt, and likewiſe in France: whereof, for my part, I make no doubt: for they be nothing elſe but the grey and whitiſh haires that we ſee hang to trees, and about the oke eſpecially, called commonly Moſſe; but only that theſe be ſweet and odoriferous. The cheife praiſe is of the whiteſt and lighteſt: a ſecond commendation belongs to that which is red: but the blacke is worth nothing, neither is any reckoning made of that which groweth in Iſlands and rockes, and (to conclude) all thoſe that ſmell not as Moſſe ſhould, but rather like to Dates, or the plants whereof they come.

Chap. XXIIII.

¶ *Of Cyprus, Aſpalathus, and Marum.*

THere is a tree in Ægypt called Cypros, bearing leaues like to Ziziphus or the Iujube tree, and a grain reſembling Coriander ſeed, with a white floure very pleaſant and ſweet. Theſe floures be ſteeped and ſodden in common oile: out of which is afterwards preſſed medi-

cinable oile called Cyprus,or Cyprinum. A pound of it will coſt fiue Roman deniers. The beſt comes from that tree which growes vpon the bankes of that riuer Nilus about Canopus,which is the firſt mouth where it diſcharges it ſelfe into the ſea. The ſecond in goodneſſe groweth about Aſcalon a citie of Iudæa. The third in worth for ſmell and ſweetnes, is had from the Iſle Cyprus. Some take this Cyprus to be the plant,which in Italy is called Liguſtrum. [*i.* Priuet.]

In the ſame tract groweth Aſpalathus:a white thornie ſhrub it is, of the bigneſſe of a ſmall tree,and beareth a floure reſembling a roſe. The root of it is in requeſt for the making of ſweet perfumes and ointments. There goes a common ſpeech, That euery plant ouer which the rainbow is ſeen bent,will caſt the ſame ſent that Aſpalathus doth:but if it chance that the rainbow ſettle ouer Aſpalathus,then it wil yeeld a ſweet ſauor incomparable, and ſuch as cannot be expreſſed. Some call it Eryſiceptrum, others Sceptrum, ſimply. The good Aſpalathus is red,or rather of a fierie colour,maſſie and heauie in hand,with a ſmell of Caſtoreum. It is ſold for fifteene deniers the pound.

In Ægypt likewiſe there groweth Marum, but it is not ſo good as that of Lydia; for it hath greater leaues,and thoſe ſpotted with ſundry colours;whereas the other hath little ſhort leaues, but they ſmell paſſing ſweet.

Chap. XXV.

¶ *Of Baulme, as well the liquor thereof called Opobalſamum, as the wood named Xylobalſamum. Alſo of Storax* [*Calamita*] *and Galbanum.*

BVt the Baulme is that ſweet and odoriferous liquor that goes beyond all others. The tree that yeelds it,Nature hath beſtowed only vpon the land of Iurie. In old time it was not to be found but in two parkes or hortyards, belonging both to the kings of Iurie,whereof the one contained not aboue twentie jugera or acres, the other not ſo much. The Emperors *Veſpaſians*, both father and ſon,brought one of thoſe little Balm trees to Rome,and ſhewed it openly to the whole citie. *Pompey* the Great likewiſe made proud boaſt and vaunted much, when hee ſaid, That trees alſo by him were borne in triumph. Now this Balme tree ſerueth and doth homage, yea is tributarie with the whole nation where it groweth:but it is of a nature far different from that which both our Latine writers, & thoſe alſo of forrain countries,haue deſcribed: for more like it is to a vine than a Myrtle. It is planted by ſlips and branches,as the vine:and of late bound and tied alſo like a young vine. It ſpreadeth and filleth the hills where it is ſet,after the manner of thoſe vines in vineyards, which without any helpe of props, ſupport and beare vp themſelues. Cut likewiſe it is,pruned,and cleanſed,from thoſe ſuperfluous ſhoots that it puts out. It loueth to be well husbanded, digged about,raked, and trimmed:and with this ordering, growes apace,ſo as within three yeres it is fruitfull. It beares a leafe much like to Rue, and continueth with a greene head all the yeare long. At the ſacking and deſtruction of Ieruſalem, the Iewes in a furious rage both againſt their owne perſons & their goods, would needs haue wreaked their anger and been reuenged on the poore Baulme trees, and haue ſpoiled them for euer: but the Romans on the other ſide ſtood in their defence,ſo as about this very plant,there was a cruell battell fought. But now theſe trees are vnited vnto the domaine of our Empire: and by order from the ſtate, are ſet and maintained: ſo as neuer at any time before, were they more in number,or taller of growth:howbeit the higheſt exceeds not two cubits. And three ſorts there be of them. The firſt hath ſmall branches and ſmall like haires; whereupon it is called Eutheriſtos, [*i.* eaſie to be cut or lopt.] The ſecond,rough and rugged to ſee to,bowing and bending forward,full of twigs and branches; ſweeter alſo than the other to ſmell to,and this they name Trachy in Greeke,which is as much to ſay as Rough. The third they call Eumeces,becauſe it is higher than the reſt, and it hath beſides a ſmooth barke: this in goodneſſe is the ſecond; and the firſt,named Eutheriſtos,is the worſt. The fruit or ſeed that the Baulme tree beareth reſembleth wine in taſt, of colour red, and it is not without a certaine veine of fat. The worſt part of the graine or fruit, is the lighter in weight, and the greener. It is clad with boughes and leaues thicker than the Myrtle. Now, for to draw the precious liquor out of it called Baulme, inciſion ought to be made in the barke,with glaſſe-kniues,with ſharp flint ſtones, or lancets of bones. For it may not abide, that any inſtrument of yron or ſteele ſhould come neare vnto the quicke;it dieth preſently if you touch the heart of it therewith:and yet the ſame will ſuffer all ſuperfluous

ſuperfluous boughes and branches to be cut off and pruned. But he that launceth and maketh inciſion,muſt guide and gage his hand very artificially in the cutting,that he go not too deep, nor prerce a jot farther than the barke. This feat being wiought,there iſſues out of the wound a juice or liquor,which they call Opobalſamum, of an excellent and ſurpaſſing ſweet ſmell: but it comes forth by ſmall drops: and as it thus weepes, the teares ought to be receiued in wooll, and then afterwards it is gathered and laid vp in ſmall hornes. Out of which it is poured into earthen pots that neuer were occupied. This Baulme when it is freſh and new, may be likened to Oile, in thickeneſſe and conſiſtence, but in colour it is white; in time it growes reddiſh,and hard withall,howbeit, cleare and tranſparent,that a man may ſee thorough it. During the wars that *Alexander* the Great waged in Iurie, it was ordinarie in a Summers day to gather one ſpoonefull of this liquor,and that was all that might be done. And when the ſeaſon ſerued beſt for this purpoſe,and that it was counted a plentifull yere, the greater hort-yard or parke of the kings aboue ſaid, neuer yeelded in al aboue 6 gallons,and the leſſer but one: ſold it was commonly for the double weight in ſiluer. But at this day, euery tree that may beare it, and hath a larger veine to abide inciſion,is launced thrice in a ſummer:and after that,it is lopt and ſhread. And thoſe cuttings are good chaffer,and ſold very well to the merchant. For being thus lopped once in 5 yeares at the fartheſt, they yeeld in branches for wood only, eight hundred deniers. This is called Xylobalſamum,and it goes into odoriferous compoſitions: for in default of the right Baulme liquor, the Apothecaries make a ſhift to ſerue their turne with the wood alone, called Xylobalſamum. As for the very bark,it enters alſo into many medicinable confections: no maruell therefore if it carrie ſome price. But it is the liquor only that is ſo precious, the liquor it is which yeelds that moſt fragrant ſmel; then followes the grain or fruit in a ſecond degree,the bark in a third,and the wood as it is laſt, ſo it hath leaſt grace and credit. Of the wood, the beſt is that which in color reſembles Box,and giues ſweeteſt ſent. But of the fruit,the greateſt graines and the weightieſt,be moſt eſteemed; ſuch bite at the tongues end, and be hote in the mouth. Howbeit,this is adulterated with the ſeed of * Hypericum,that comes from the citie Petra. But the deceit is ſoone detected and found, for that ſeed is not ſo big, ſo maſſie and full,nor ſo long as the true graine of Baulme:beſides, it hath but a dull ſauor or none at all,and in taſt reſembles pepper. The liquor is knowne to be right or good,if it be oileous and fat,thin, and cheere,ſomwhat inclining to red;and,if in rubbing betweene your fingers,it renders a pleaſant ſauour. The white Baulme may be raunged in a ſecond place of goodneſſe:the greene and the thicke is not ſo good as it: but the blacke is worſt. For Baulme as well as Oile,will be ſtale and worſe for the age,if it be kept too long. This is moreouer obſerued, that in euery inciſion, that which flowed forth before the ſeed is ripe,is moſt precious. Ouer and beſides,this Baulme may be ſophiſticated with the owne ſeed:and hardly can this couſenage be found out, but that it hath a bitterer taſt than that which is naturall. For the good Baulme ſhould be pleaſant and delicat in the mouth,not ſoure nor tart at all:only in ſmel it ſhould haue a harſh verdeur. Corrupted it may be otherwiſe, with Oile of Roſes,of Cyperus,of Lentiske,or Maſticke,of Ben,of Terebinth,and Myrtles,alſo with Roſin,Galbanum,and Cyprian waxe,as occaſion ſerues, and according as men liſt to ſophiſticat it. But the greateſt knauerie of al,is to mingle gum among it:for being ſo handled, it will ſticke and cleaue to the palme or inſide of a mans hand, nay, it will ſinke in water to the bottome,which are two chiefe properties of the right Balme. For the very pure and perfect Baulme ought to cleaue too:but when it hath gum mingled among, ſtick it will likewiſe,but it will gather ſoon a brittle rouſe or cruſt vpon it,which quickly cracks and breaks. Alſo this ſophiſtication is found out by the taſt. But in caſe there be any trumperie of Wax or Roſin,the fire wil ſoone bewray it;for when it burnes,it will yeeld a more muddie and blacke flame. As for the ſophiſtication made with honie, it may ſoon be knowne:for preſently the flies will take it, and gather thicke about it. Ouer and beſides,put a drop of pure Baulme into warme water,it will ſettle to the bottom of the veſſell, and congeale:but contrariwiſe,the counterfeit Baulme,will flote and ſwim aboue like oile. Againe,if it haue Galbanum in it,yee ſhall ſee a white ſtreake or circle round about it. To conclude, would you know in a word the right Baulme indeed? It will turne milke,and cruddle it:and it wil not ſtain a cloth. In ſumme, there is no merchandiſe and commodity in the world,wherin there is practiſed more fraud and deceit, than in the trafficke of Baulme. For a Sextare or wine quart of Baulme will coſt a thouſand Roman deniers by retaile, which was bought for three hundred and no more at the hands

* i. S. Iohns wort.

of the factors vnder the Emperor, who sold it first. Whereby a man may see how gainfull it is G
to increase this liquor by sophistications. As for the Baulme wood Xylobalsamum, the price of it is six deniers a pound.

Now it remaines to speake of Storax [Calamita] comming out of that part of Syria, which aboue Phœnice, confronts and borders next to Iurie: and namely, about Gabala, Marathus and the mount Casius in Seleucia. The tree that yeeldeth this gum or liquor, is also named Styrax, like vnto a Quince tree. It hath first a rawish austere tast, which afterwards turnes to be more sweet and pleasant. There is found within a resemblance of canes and reeds, full of this iuice. Howbeit, about the rising of the Dog star there be certain winged wormes settle vpon the said reeds, creepe in and eat away the marrow (as it were) which lay within: so as a man shall find nought left behind but a mouldy dust or rotten powder, good for nothing. Next to this Storax H
of Syria, great account is made of that which commeth out of Pisidia, from Sidon, Cypres, and Cilicia: but least reckoning is made of that which Candie sendeth vs. That which is brought from the mount Amanus in Syria, is good for the Physicians, but better for the perfumers and confectioners. From what nation soeuer it comes, the best Storax is that which is red, somewhat glutinous besides by reason of the fattines. The worst is that which hath no consistence and tenacitie, but crumbles like bran, and is so mouldie that it is ouergrowne with a white hoarie mosse. The pedlers and such like petie merchants can skill how to sophisticate this drug also, with the rosin of cedar and gum: otherwhiles also with honie, or bitter almonds. But al these deceits are known by the tast. The price of the best is 19 deniers a pound. There is a Storax besides which Pamphylia doth yeeld, but drier it is, and nothing so full of moisture. I

Moreouer, we haue from Syria out of the same mountain Amanus, another kind of gum called Galbanum, issuing out of an hearbe like Fennell-geant, which some call by the name of the said Rosin, others Stagonitis. The best Galbanum, and which is most set by, is grisslie and cleare withall, resembling Hammoniacum, without any spils of wood in it. For in that wise the huckesters vse to deceiue chapmen by mingling beanes with it, or the gum Sagapenum. The right Galbanum, if you burn it, chaseth away Serpents with the strong perfume or smoke thereof. It is sold for fiue deniers the pound: and is vsed only in Physicke for medicines.

Chap. XXVI.

¶ *Of Panaces, Spondylium, and Malobathrum.* K

THe same perfumers seeke also into the same Syria for Panaces growing there, and yet it is to be found also about Psophis, a citie in Arcadia; and the fountaines from whence floweth the riuer Erymanthus: yea, and in Affricke besides, and Macedonie. This Panax is an hearbe with a tall stalke and round tust in the head like Fennell, and yet it is a plant by it selfe, growing to the height of fiue cubits. At the first it putteth out foure leaues, and afterwards six. They be very large and round withall, lying vpon the ground: but toward the top they resemble the leaues of an Oliue: it beareth seed in the head hanging within certaine round tufts, as doth the Ferula. Out of the stalk of this hearb there is drawn a liquor by way of incision, made in harueste time: and likewise out of the root in Autumne, or the fall of the leaf. And this is called Opopanax. The best lookes white when it is gathered and congealed. The next in worth and weight, is that which is yellow. As for the blacke it is of no account. The berter Opoponax costeth not aboue two Asses a pound.

Another hearbe there is of this Fennell kind, namely Spondylium, somwhat different from the former, but in leaues only; because they be lesse than those of Panax, and diuided after the manner of the Plane leaues. This Spondylium groweth no where but in cold and shadowie places. It carrieth a fruit or graine called also Spondylium, which resembleth the forme of Sil or Siler montanum, and serueth for no vse but Physick.

We are beholden moreouer to Syria for Malobathrum. This is a tree that beares leaues rolled vp round together, and seeming to the eie withered. Out of which there is drawne and pres- M
sed an Oile for perfumers to vse. Ægypt is more fruitfull of this hearbe than Syria. And yet there comes a better kind therof from India than both those countries. It is said, that it grows there in meeres and standing waters swimming aloft, after the manner of Fen-lentils or Duckes meat, more odoriferous than Saffron: enclining to a blacke colour: rough in handling, & in tast salt

A salt or brackish. The white is not so well esteemed. It wil soon be mouldie when it is stale. The rellish thereof ought to resemble Nardus at the tongues end. The perfume or smell that * Ma- *Folium.
lobathrum or the leafe yeeldeth when it is boiled in wine, passeth all others. It is strange and monstrous, which is obserued in the price: for it hath risen from one denier to 300 a pound, whereas the Oile it selfe doth cost 60.

Chap. XXVII.

¶ *Of Oile Olive, made of greene Olines, likewise of Grape Veriuice.*

FOr the mixture and composition of ointments, the Oile of vnripe Oliues and Veriuice is very good: and verily, made it is, in two kinds, & after two sorts, to wit, of the Oliue, and the
B Vine. Of the Oliues, if yee would haue good, they ought to bee pressed whiles they be yet white; for if they turn colour once and be blackish, the worse is the Oyle or Veriuice that commeth thereof. And such kind of Oliues be called Drupæ, namely, before they be fully ripe and good to eat, and yet haue lost their colour. And herein is the difference, for that the oyle of this later sort is green, the other is white. Now as for grape Verjuice, it should be made of the Vine Psythia, or Ammineа, and before the canicular daies, when as the grapes bee but new knit, and no bigger than the Cich-pease. The grapes (I say) must be gathered for this purpose, at the beginning before they change colour, & the juice thereof ought then to be taken. Then should the Verjuice that comes from it, be sunned: and heed must be taken in any case, that no dews by night do catch it, and therefore it would stand in couvert. Now when this iuice or verjuice is
C gathered, it is put vp in earthen pots: and otherwhiles kept also in vessels of copper. The best grape verjuice, is red, sharp, and soure in taste, dry withall and scyptick. A pound or a pinte of such verjuice is worth six deniers. It may be made in another sort: namely, by punning and stamping vnripe grapes in morters: drying it afterwards in the Sunne, and so made vp into certain rolls or trochisks.

Chap. XXVIII.

¶ *Of Bryon and Oenanthe: of the tree Elate, and Cinnamon Cariopus.*

THe mosse of the white Poplar or Asp, which is reputed as the grape therof, is vsed likewise in these odoriferous and sweet compositions. The best grows about Cnidos or Caria, in
E thirsty, dry, and rough places. A second sort is that which is found vpon the Cedar of Lycia. To this pertaineth Oenanthæ, which is no more but the grapes of the wild vine called Labrusca. Gathered it is when it floureth, that is to say, when it smels best. It is dried in the shade vpon a linnen sheet lying vnder it, and then put vp into little barrels. The chiefe commeth from Parapotamia: the second from Antiochia and Laodicea in Syria: and a third sort from the mountaines of Media: and this is best for medicine. Some prefer before all these, that which groweth in the Island Cyprus. As for that which is made in Africke, it is meet for Physitions onely, and is called Massaris. Now, the better euer is that which they gather from the white wild vine, than from the black. Moreouer, there is another tree which serues for perfumes: some
call it Elate, and we Abies [*i.* the Fir] others Palma or the Date, and some againe Spathe. That
F which grows about the sands of Africk, where *Iupiter Hammons* temple standeth, is highly commended aboue the rest: and after it, that in Ægypt. Next thereto is the Syrian. This tree is odoriferous when it grows in dry places only: it hath in it a certaine fat liquor or Rosin, and entreth into compositions of sweet ointments, for to correct and mitigate the other oile. In Syria there is a drug which they call Cinnamum Caryopon. A iuice or oyle this is, pressed out of a certain nut. This Cinnamon differeth much in forme from the stickes of true Cinnamon indeed aboue specified: although in smell it commeth neare vnto it. A pound thereof is worth to be bought and sold 40 Asses, [*i.* 2 *shil.* 6 *d.*]

THE

THE THIRTEENTH BOOK OF THE HISTORIE OF NATVRE,

WRITTEN BY C. PLINIVS SECVNDVS.

The Proeme.

THus far forth the woods and forrests are of estimation, in regard of the pleasure they doe vnto vs for perfumes and sweet odors: and in truth, if we consider duly these aromaticall plants, admirable they be euerie one in their kinde, euen as they be weighed apart by themselues alone. But such is the riot and superfluitie of man, that being not content with that perfection of Nature shining in those plants and trees aboue rehearsed, he hath not ceased to mingle and compound them, and so of them all together for to make one confused smell: and thus were our sweet ointments and precious perfumes deuised, whereof we purpose to write in this booke next insuing.

CHAP. I.

¶ Of Ointments, Perfumes, and their compositions: and when they came into knowledge first at Rome.

AS touching the inuention of Ointments, it is not well knowne who was the first that deuised them. Certaine it is, that during the raigne of the Troianes, and whileſt Ilium ſtood, men knew not what they meant: nay, they vſed not ſo much as Incenſe in Sacrifice and diuine ſeruice. The fume and ſmoke of the Cedar and the Citron trees onely, the old Troianes were acquainted with when they offered ſacrifice: their fuming and walming ſteame (more truly I may ſo terme it, than any odoriferous perfume) they vſed: which they might eaſily come by, ſince they were plants growing among them, and ſo familiar; notwithſtanding they had found out the iuice of Roſes, wherwith yet they would not correct the foreſaid ſtrong fumes in thoſe daies; for that alſo was knowne to be a commendable qualitie of Oile Roſate. But the truth is, The Perſians and none but they ought to be reputed the inuentors of precious perfumes and odoriferous ointments. For they to palliate and hide the ranke and ſtinking breath which commeth by their ſurfet and exceſſe of meats and drinkes, are forced to helpe themſelues by ſome artificiall meanes, and therefore goe euermore all to be perfumed and greaſed with ſweet ointments. And verily, ſo farre as euer I could finde by reading hiſtories; the firſt prince that ſet ſuch ſtore by coſtly perfumes, was King *Darius*, among whoſe coffers (after that *Alexander* the Great had defeated him and woon his campe) there was found with other roiall furniture of his, a fine caſket full of perfumes and coſtly ointments. But afterwards they grew into ſo good credit euen among vs, that they were admitted into the ranke of the principal pleaſures, the moſt commendable delights, and the honeſteſt comforts of this life. And more than that, men proceeded ſo far, as therewith to honour the dead: as if by right that duty belonged to them. And therefore it ſhall not be amiſſe to diſcourſe of this theame more at large. Wherein I muſt aduertiſe the Reader by the way, that for the preſent I will but only name thoſe ingredients that go into the compoſition of theſe ointments: ſuch I mean as came not from herbs and trees, ſhrubs & plants; reſeruing the treatiſe of their natures, vertues, and properties, vnto their due place.

First

First and formoſt therefore, all perfumes took their names either of the country where they were compounded, or of the liquors that went to their making, or of the plants that yeelded the ſimples and the drugs: or els of the cauſes and occaſions proper and peculiar vnto them. And here it would be noted alſo principally, that the ſame ointments were not alwaies in like credit and eſtimation: but one robbed another of their honor and worth: inſomuch, as many times vpon ſundry occaſions, that which was lately in requeſt and price, anon gaue place to a new and later inuention. At the firſt in antient time, the beſt ointments were thought to come from Deſos, but afterwards, thoſe that were brought out of Ægypt: no talke then but of Mendeſium, compounded at Mendes, a city there. And this varietie and alteration was not occaſioned alwaies by the diuerſity of compoſition and mixture, but otherwhiles by reaſon of good or bad drugs: for ye ſhould haue the ſame kind of liquors and oiles better in this country for one purpoſe, and in that for another: yea, and that which in ſome place was right and true, the ſame did degenerat and grow to a baſtard nature, if you changed once the region: for a long time, the oile or ointment of Iris or the Floure-de-luce root made at Corinth, was in much requeſt, and highly praiſed: but afterwards that of Cizicum won the name and credit, for the artificiall compoſition thereof. Semblably, the oile of Roſes that came from Phaſelus, was greatly called for: but in proceſſe of time, Naples, Capua, and Prænеſte, ſtole that honor and glory from thence in that behalfe. The ointment of Saffron, confected at Soli in Cilicia, imported for a good while and carried the praiſe alone: but ſoone after, that of Rhodes was euery mans money. The oile drawne out of the floures of the wild vine in Cyprus, bare the name once; but afterwards that of Egypt was preferred before it: & in the end the Adramyttians gained the credite and commendation from both places, for the perfect and abſolute confection thereof. The ointment made of Marjoram, gaue credit for a certain time to the Iſle Cos: but not long after, their name was greater for another made of Quinces. As for the oile Cyprinum, which came of Cypros, the beſt was thought to be made in Cyprus: but afterwards there was a better ſuppoſed to be in Egypt: where the ointments Metopium and Mendeſium all of a ſudden were better accepted than all the reſt. It was not long firſt, but that Phœnice put Ægypt by that credit for thoſe two ſingular compoſitions, & left the Ægyptians the name alone for the foreſaid oyle Cyprinum. The Athenians were renowned for their antient Panathenaicum, & euer held their own. There was in old time a notable compoſition named Pardalium, made in Tharſus: but now the mixture & making thereof is quite loſt. The ointment likewiſe Narciſſimum, where the floure of the Daffodil was the Baſis, is now forgotten, and no more made of it. The manner of compounding all theſe ointments, was twofold, to wit, either of the iuice & liquor, or els of the very ſubſtance & body of the ſimples. The former ſort reſemble rather the nature of oiles: but the latet of ointments. And theſe the Greeks cal either Stymmata, which yeeld the conſiſtence & thicknes to ointments; or Hedyſmata, which ſerue to aromatize and giue a compleat perfection to them. There is a third thing between theſe, requiſit alſo to the full making of theſe ſweet ointments, namely, the colour: although many take no regard at all of it. And for this purpoſe, the perfumers put into their compoſitions Cinnabaris [/. Vermillion or Sanguis Draconis] and Orcanet. The ſalt moreouer that is ſtrewed among, ſeueth to repreſſe and correct the nature of the oile that vniteth all the ingredients beſides. But thoſe that haue the root of Orcanet in them, need no ſalt at all to be put in beſides. As for Roſin and Gum, they are mingled with the reſt to incorporat the drugs and ſpices, and to keep in the ſweet odour therof, which otherwiſe would euaporate and ſoon be loſt. We are to preſume by all likelyhood, that the firſt compoſition of ointments and ſooneſt made, was of the odoriferous moſſe Bryon, and the oile of Ben onely: whereof we haue written in the former book. Then came in place a more compound ointment called Mendeſium, and that receiued Roſin alſo to the foreſaid oile of Ben. And more than that, another beſides named Metopium. Now is this Metopium an oile compounded, which the Ægyptians do preſſe out firſt of bitter Almonds, but they added thereto for to incorporate the better, grape Veriuice: and the ingredients beſides, were Cardamanum, Squinanth, ſweet Calamus, Hony, Wine, Myrrhe, the graines or ſeeds of Baulme, Galbanum, Roſine, and Terpintine. One of the meaneſt and baſeſt ointments now adaies, and therefore thought to be as antient as any other, is that which conſiſts of the oile of Myrtles, ſweet Calamus, Cypreſſe, and Cypros, [Squinanth] Lentiske, and the rind of the Pomegranat. But I would thinke verily, that Oyntments came to beeſo divulged and common euery where abroad, by meanes of Roſes moſt

of

of all: considering, that nothing grows more rife in all places. Which was the cause, that the G
simple mixture of oile Rosate, without any sophistication besides, continued for a long time,
hauing the addition of grape Verjuice, the floure of Roses, the Saffron, Cinnabaris, or Sang-
Dragon, Calamus, Hony, Squinanth, the floure of salt called Sperma-ceti, or els in lieu therof
the root of Orcanet, & Wine. The oile or ointment of Saffron was after the same sort made, by
putting thereto Cinnabaris, Orcanet, & wine. Semblably is to be said of the oile of the sweet
Iesse Maioran, wherin was mixed grape verjuice and sweet Calamus. This composition was sin-
* Samsuchus. gularly wel made in Cyprus & at Mitylene, where great store of sweet *Majoran grows. There
be other oiles likewise which are not of so good reckoning, namely, of Myrtles, & Bayes, which
receiue a mixture with the addition of Majoran, Lillies, Feni-greek, Myrrhe, Casia, Spikenard,
Squinanth, & Cinnamon. Moreouer, of great quinces & the lesse called Mala Struthea, is made H
the oile Melinum, whereof we wil speak hereafter: which the perfumers vse in their ointments,
by putting thereto grape-verjuice, the oile Cyprinum, the oile Sesamine, Baulme, Squinanth,
* Sesamum. Casia, & Sothernwood. As touching the oile of *Lillies, which is the most subtil and thinnest
of all other, it is made of Lillies, Ben, sweet Calamus, Hony, Cinnamon, Saffron, Myrrhe, & As-
palathus. Also the foresaid oile Cyprinum is made of the floures of Cypros, of Veriuice, Car-
damonum, Calamus, Aspalathus, & Sothernwood. Some there be that put moreouer vnto this
oile, Myrrhe & Panace. The Sidonians are excellent at the making of this composition: & after
them the Egyptians, so that they put not in Sesamium oile: for it wil last & keep good ful four
yeres: & if it begin to lose the smel, it is quickned and refreshed again with Cinnamon. Now
* Telinum. as touching the ointment of *Feni-greek, it is made of fresh oile, Cyperus, Calamus, Melilot, Fe- I
ni-greeke, Hony, oile of Quinces, the greater & the lesse sweet Marioram. This was of highest
reputation in the daies of *Menander* the comicall poet. But long after there succeeded into the
same place of credit, the ointment Megalium: so called for the great glory that it caried: & this
was compounded of the oile of Ben, of Baulm liquor, sweet Calamus, Squinanth, Balm-wood,
Casia, & Rosin. In the making hereof, this property it had by it selfe, that all the while it was a
compounding and seething, it should euer and anon be vented, & shifted out of one vessell into
another, vntill the smel of it were gone. Which neuertheless it would recouer againe after it
was once cold. Moreouer, some liquors there be of themselues, that without any other mixtures
may serue and go for noble sweet ointments. Among which, that of Malabathrum is the chief: K
next to it the Flour-de-luce of Sclauonia, and the great sweet Marioram of Cyzicum. Howbeit,
the Herbarists loue to be putting in some few spices besides, as well in the one as the other: but
some make choise of one thing, some of another to intermingle withall. They that take delight
to haue their mixtures most compound, adde vnto either of those aboue named, Hony, the floure
of salt, grape veriuice, the leaues of Agnus Castus, and Panace, & generally all that be strange
and forrain, to make their compositions seem more wonderful. To the oile or ointment of Cin-
* Xylobalsamum namon, there goes the oile of Ben, Balm-wood, sweet Calamus, Squinanth, the * fruit or seedes
* Carpobalsami of Balsamanum, Myrrh, & Hony Aromatical. This is of all other the thickest ointment in sub-
stance. The price of this, is from 35 deniers to 300 the pound. As for the ointment Nardinum
or Foliatum, it is composed of the oile of green Oliues or grape veriuice, of the oile of Ben, of L
Squinanth, Costus, Spikenard, Amomum, Myrrhe, and Baulme. Howbeit, this point would not
be forgotten in the making of this composition, that it is a very easie matter to sophisticate it,
by reason, that there be no fewer than nine herbs or simples which we haue declared, that come
neere to the Indian Spikenard, and may be taken for it. Finally, to quicken and fortifie the sent
of all these ointments, there must no spare be made of Costus and Amomum, which of all o-
ther drugs pierce into the nosthrils, and cast a strong smell. To make them thicker and more
pleasant, there would be good store of Myrrhe put in: but to haue them better for the vse of
Physicke, and more medicinable, it is good to season them wel with Saffron. As for Amomum,
of it selfe alone it causeth all ointments where it comes to be most quicke and penetratiue: in-
somuch as it causeth head-ache. Some for to spare cost thinke it sufficient to aromatize onely M
these ointments with those drugs that are so deare and precious, either by strewing the pouder,
or sprinckling their liquors amongst, whereas the rest of the ingredients be boiled: but such
compositions be nothing so effectuall, as when all be sodden and fermented together. As for
Myrrhe it selfe, it maketh alone a precious ointment without any other oile, I meane that one-
ly of the liquor Stacte: for otherwise it is exceeding bitter and vnpleasant. If it bee mingled
with

A with the oile Cyprinum, it looketh greene; if with the oile of Lillies, it will be fatty and vnctu-
ous; if with Mendesium, blacke; with oile Roset, white; with that of Myrrh, pale. Lo what were
the inuentions in old time of aromaticall and odoriferous ointments: loe what were the deui-
ses afterwards of the shopkeepers and perfumers, to picke pence out of our purses, and to rob vs.
It remains now to speak of the parangon indeed of all these pleasures and delights: of that I say
wherein consists the very height and chiefe point of this argument in hand.

Chap. II.

¶ *Of the Ointment called Roiall: of drie Perfumes, Pouders, and Pomanders: and how they be kept.*

B THe Roiall Ointment therefore (which the Parthian kings vsed ordinarily, and of whome
it took that name to be called Roiall) is tempered and composed in this manner: to wit,
of Ben, Costus, Amonium, Cinamon, the Arbut or Comarus, Cadamonum, Spikenard,
Marum, Myrrhe, Casia, Storax Calamita, Ladanum, Baulme liquor, sweet Calamus, Squinanth
of Syria, the floure of the wild vine, Malabathrum, Serichatum, Cyperus, Aspalathus, Panace
Saffron, Cypros, Marioram the greater, clarified, or purified Hony, and Wine. As for Italy (the
lady and conqueresse of all other nations) there growes nothing in it good to make ointments,
no nor nothing throughout all Europe, vnlesse it be the Flour-de-luce root, and the Celticke
C Spikenard: for wine, Roses, Myrtle leaues, and oile, are well known to be common for all coun-
tries.

As for those mixtures which be called Diapasmata, they consist of dry spices and drugs. Al-
so the dregs or grounds of Ointments, they cal Magma. Moreouer, this is to be obserued in the
mixture and composition of those Ointments, That the drugs which be put in last, are euer the
strongest and most effectuall.

Now as touching the keeping of Ointments, they are best preserued in pots or vessels of Ala-
bastre: and Odors are surest maintained and continue longest, being incorporate in oile: which
the fatter that it is, serueth better for a continuance of their sent; as a man may see very well in
the Oile of Almonds. And to say a truth, the older that an ointment is, and the longer fermen-
ted, the more vertue it hath for the age. The sun is an enemy vnto them, and therefore they must
D incorporate and vnite together in the shade, and be put vp in vessels of lead. The triall of them
is taken with the back-part of the hand, for feare lest that the heat of the fleshie side within,
should corrupt and marre them.

Chap. III.

¶ *Of the Superfluitie in expence at Rome, about these Ointments: and at what time they were first vsed there.*

AT this day there is not in Rome any thing wherein men more exceed, than in these costly
and precious ointments: and yet of all other, they are most superfluous and may be best
E spared. True it is, that much money is laid out vpon pearles and precious stones; but these
are in the nature of a domaine and inheritance, and fall to the next heire in succession. Againe,
rich and costly apparell stand vs in a great deale of coine; howbeit they are dureable and last a
long time: but Perfumes and ointments, are soone done and gone; they exhale and breath away
quickly; they are momentanie, they serue but for the present, and die suddenly. The greatest
matter in them, and their commendation is this, To cause a man (what businesse soeuer he hath
otherwise) to cast his eie and looke after a gentlewoman as she passes by perfumed in the streets,
and sendeth a smell from her as she goes. This is all the good they do: and yet forsooth a pound
of this ware must cost 400 deniers: so deare is the pleasure that passes from our selues & goes to
F another: for the party himselfe that carrieth the perfume about him, hath little or no delight at
all in it: others they be that read the benefit and pleasure thereof. And yet amoug these odori-
ferous compositions, there is choise and difference betweene one and another. We finde in the
writings of *M. Cicero*, that he made more account of those ointments that fauored of the earth,
than those which smelled all strong of Saffron: as if he meant thereby, That in this excessiue
disorder and most corrupt enormitie of all others, a certaine moderation yet and sad delay

would

would do wel; and that a seuerity (if I may so say) in the vice it self, were better to be liked. But some take delight especially in thick and grosse ointments, and are not content to be perfumed yea and bathed all ouer, vnlesse they be besmeared, greased, and daubed also therewith. I haue my selfe seen some of them to annoint the very soles of their feet with these precious Baulms: and (by report) it was *M. Otho* that first taught the Emperor *Nero* this wanton delicacie. But I would gladly know, and some good body tell me, I pray, how he could feele the smell thereof, and what delight or contentment it might yeeld from that part of the body? I haue heard say besides, by some of the inward familiars and speciall fauorits of this prince, That he commanded the very walls of his baines and stouues to be perfumed with precious ointments: and that *C. Caligula* the Emperor, caused the very vessels and seats wherein he vsed to sit when he bathed or swet in his hot-house, to be in that manner annointed. And because this might not seeme to be a speciall pleasure fit for an Emperor onely, I knew one of *Neroes* seruants afterwards, who vsed so to do as wel as his lord and master. But I muse and maruell at nothing so much, as that this wanton delight should find the way and enter so far as into the mids of the camp. For wot ye what? I assure you the very standards and ensignes, the Ægles (I say) and Minotaures, so dusty as they be otherwise, so foule and ill-fauored, as being kept so long, and standing by vnoccupied, are wont forsooth to be annointed and perfumed vpon high and festiuall daies. And, so god helpe me, I would I knew who it was that first brought vp this fashion and needlesse superfluitie: Certes, I would not defraud him of his due honor: I would (I say) recommend his name vnto all posterity. But thus it is (no doubt) and it cannot otherwise be; Our Ægles and standerds (bribed, hired, and corrupted with this so good a reward) haue therefore in recompense conquered the whole world. Vnder such colors and pretences (indeed) we deceiue our selues, and cloak the vice and ryot of our times: and thus hauing so good a reason as this, to induce and draw vs on, we may not sticke to haue precious baulmes vpon our heads, so it be vnder our sallats and mourrons.

To say for certainty and precisely, when this enormity entered first into Rome and began there to raigne, I am not able. Sure it is, as appeareth vpon record, That after the subduing of K. *Antiocus* and the conquest of Asia, which was about the 565 yeare from the foundation of Rome, *P. Licinius Crassus*, and *L. Iulius Cæsar* the Censors, published an edict, prohibiting and forbidding to sell any forreine or strange ointments within Rome: for so they termed these sweet mixtures and compositions. But (beleeue me) now adaies, some there be so wanton and delicat, that there is no wine or other drinke good with them, nor will go downe their throat, vnlesse it be spiced and aromatized with these baulms: and so little passe they for the bitternesse of these odours and fruits, that they are well content to wast and spend a deale therof, without and within, behind and before, aboue and beneath, to enioy the perfume thereof in all parts of the body. Well knowne it is, that *L. Plotius*, brother to *L. Plancus*, a man of great credit and authority, as hauing bin twice Consul, and Censor besides, being outlawed and proclaimed a banished person by the decree of the * Trium virs, was discouered within a certaine caue at Salernum, where he lay close hidden and sure enough otherwise, by the very smel onely of a precious ointment that he had about him: and so by that meanes (besides the shame and disgrace that he receiued, thus to detect himselfe and be found of his enemies) the rigor of the act and arrest that passed against him, was executed and performed vpon his body. And who would euer pitty such persons, & not iudge them worthy to come to so bad an end? but to conclude all this discourse, there is not a country in the world that yeelds such plenty and varietie of drugges fit for these compositions, as Egypt: and next to it, Campaine in Italy may carry the name, for the store of roses there growing.

* *Antonie, Lepidus, & Octauius.*

Chap. IIII.

Of Dates, and Date trees: their nature and seuerall kinds.

THe land of Iury is as much renowned, or rather more, for the abundance of Palms or Date trees which it affourdeth: the discourse whereof we will now enter into. True it is, and it cannot be denied verily, that there be of them found in Europe, and namely, euery where in Italy; but such, be all of them barren. Also in the maritime parts and sea-coasts of Spaine, ye shall meet with Palmes that beare Dates, but they are but tart and vnpleasant, and indeed neuer come

A come to their maturity and ripenesse. Those of Africk, I must needs say, bring forth a sweet and pleasant fruit; but it will not last, and soon is gone: whereas contrariwise, in the East parts, the people make wine thereof; and in some countries they vse it for bread, yea the very brute and four-footed beasts do ordinarily feed of Dates: and therefore we hold and conclude, that Dates may be truly called, forrein fruits; and their Trees, meere strangers in this part of the world. For in Italy a man shal not find so much as one Palm tree that comes vp of it selfe, without it be set or planted by mans hand: neither in any other region whatsoeuer, vnlesse it lie vnder some hot climat: but to beare fruit ye shal neuer know it in any country, if the same be not extreme ardent and scortching. Date trees loue a light and sandy ground, and specially (for the most part) if it stand much vpon a veine of Nitre besides. And yet contented will they be to grow by some riuer side, where they may haue, as it were, one foot in the water, and be euer drinking all the yere
B long, especially in a drie season. Some thinke, that dung is as contrary and hurtfull vnto them, as to some kind of Citron trees in Assyria, vnlesse it be mingled & tempered with water, or the trees planted neere to some running riuer. Moreouer, many kinds there be of Date trees: and the first are smal, and exceed not the bignesse of shrubs: these in some parts are barren, and in others fruitful: they shute out little short branches round about, but very full of leaues, the which in most places serue in stead of parget & rough-cast, to defend wals of houses against the weather and drifts of rain. Howbeit a second sort there be that are much taller, and whole forrests stand only vpon those trees: they put forth leaues sharp pointed, and they grow round about disposed one close vnto another in manner of comb-teeth: and these must of necessitie be taken for wild,
C and no better: and they loue here and there as it falleth out, to be intermingled among those of the tamer kind, as if they tooke I wot not what pleasure in their company. The rest growing in the East parts, be streight, round, and tall, enuironed about the body with circles or houps made of the very barke it selfe, and they are of the thickenesse of a mans thumbe, set in order one aboue another like steps & greeces neere together, in such fort that the people of the East may easily climbe them, by the means of the said barke, which serueth not onely for a vestiment to the tree, but also for staires to him that would mount vp, so that it is a wonder to see how nimbly a man will run vp to the top. These Date trees beare all their branches toward the head, and their fruit comes not forth among the leaues as in other trees, but hangeth to certaine branches and twigs of the owne between the boughes like clusters of grapes: in so much as it resembleth partly the nature of a grape, and partly of an apple. The leaues made in forme of a knife blade
D sharp toward the point, slit as it were and clouen in the edge along both sides, make shew at the first of certain faire and beautifull gems: and now they serue in stead of cords, and to bind vines together: also being diuided and sliued into flakes, they are good to plait for hats and light bongraces for the head, against the heat of the Sunne. Moreouer, all learned men who are deeply studied in the secrets of Nature, be of opinion & do teach vs, That in all trees and plants, nay rather in all things that proceed out of the earth, euen in the very herbs, there are both sexes. Let it suffice therefore to haue spoken thus much once for all in this place. But there is no tree whatsoeuer, in which this distinction of male and female appeareth more, than in Palme-trees: for the male putteth forth his bloome in the branch, but the female sheweth no floure at all, but sprouteth and shooteth out buds in manner of a thorne: howbeit both in the one and the
E other, the pulp or flesh of the Date commeth first, and after it the wooddy stone within, which stands in stead of the grain and seed of the Date. And this appeares euidently by a good token, for that in the same branch there be found little yong Dates without any such stone at al. Now is the said stone or kernell of the Date, in forme long, not so round and turned like a ball as that of the Oliue. Besides, along the back it hath a cut or deep slit chamfered in (as it were) between two pillowes; but in the mids of the belly on the other side, for the most part it hath a round specke, formed like a nauill, whereat the root or chit beginneth first to put forth. Moreouer, for the better planting of Dates, they set two together of their stones in a ranke with the bellies downward to the earth, and as many ouer their heads: for if one alone should come vp, it were not able to stand of it selfe, the root and young plant would be so feeble; but foure together so ioine, clasp, and grow one to another, that they do well enough and are sufficient to beare themF selues vpright: the kernel or wooddy substance within the Date, is diuided from the fleshy pulp and meat thereof, by many white pellicles or thin skins between: neither lieth it close thereto; but hollow a good distance from it, saue that in the head it is fastened thereunto by a thred or

ſtring:and yet there be other pellicles that cleaue faſt and ſticke to the ſubſtance of the Date within. The Date is a yeare in ripening. Howbeit in certaine places, as namely in Cyprus, the meat or fleſhie pulp thereof is ſweet and pleaſant in taſte, although it be not come to the full ripeneſſe: [where alſo the leafe of the tree is broader,and the fruit rounder than the reſt:]mary then you muſt take heed not to eat and ſwallow down the very bodily ſubſtance of it, but ſpit it forth after you haue wel chewed & ſucked out the iuice therof. Alſo they ſay,that in Arabia the dates haue but a faint & weak ſweetnes with them: & yet K. *Iuba* makes greateſt account of thoſe which the region of the Scenites in Arabia doth yeeld,where they be called Dabula: and he commends them for their delicate and pleaſant taſt, before all others. Moreouer, it is conſtantly affirmed, That the females be naturally barren, and will not beare fruit without the company of the males among them to make them for to conceiue:yet grow they wil neuertheleſſe and come vp of themſelues,yea and become tall woods: and verily a man ſhall ſee many of the females ſtand about one male,bending and leaning in the head full kindly toward him, yeelding their branches that way as if they courted him for to win his loue. But contrariwiſe, he a grim ſir and a coy,carries his head aloft,bears his briſtled & rough arms vpright on high: and yet what with his very lookes,what with his breathing and exhalations vpon them,or elſe with a certain duſt that paſſes from him,he doth the part of an husband,inſomuch as all the females about him,conceiue and are fruitfull with his only preſence. It is ſaid moreouer, that if this male tree be cut downe,his wiues wil afterwards become barren and beare no more Dates, as if they were widows. Finally,ſo euident is the copulation of theſe ſexes in the Date trees,& knowne to be ſo effectuall,that men haue deuiſed alſo to make the females fruitful, by caſting vpon them the blooms and down that the male bears,yea,and otherwhiles by ſtrewing the pouder which he yeelds vpon them. Beſides the maner aboue ſaid of ſetting date ſtones for increaſe, the trees may be replanted of the very truncheons of two cubits long, ſliued and diuided from the very brain(as it were)of the green tree in the top,and ſo couched and interred,leauing only the head without the ground. Moreouer, Date trees wil take again and liue, if either their ſlips be pluckt from the root,or their tendrils & ſmall branches be ſet in the earth. As for the Aſſyrians, they make no more adoe, but if it be a moiſt ſoile,plaſh the very tree it ſelfe whole as it ſtands,and draw it along and ſo trench it within the ground,and thus it will take root and propagate:but ſuch will neuer proue faire trees,but skrubs only. And therefore they deuiſe certain Seminaries or Nource gardens of them,and no ſooner be they of one yeares growth, but they tranſplant them;and ſo againe a fecond time when they be two yeares old: for theſe trees loue alone to be remoued from one place to another. But whereas in other countries this tranſplantation is practiſed in the ſpring,the Aſſyrians attend the very mids and heat of Summer, and in the beginning of the Dog-daies vſe to replant them. Moreouer,in that countrie they neither cut off the heads,ne yet thred the branches of the yong plants with their hooks and bils;but rather bind vp their boughes,that they may ſhoot vp in height the better. Howbeit, when they are ſtrong,they cut their branches, for to make the bodies burniſh and waxe thicker, but yet in the lopping they leaue ſtumps of boughes halfe a foot long,to the very tree:which if they were cut off,in other places,would be the death of the mother ſtocke. And foraſmuch as Date trees delight in a ſalt and nitrous ſoile (according as hath bin before ſaid) the Aſſyrians therefore when they meet not with a ground of that nature,ſtrew ſalt,not cloſe about the roots, but ſomwhat farther off. In Syria and Egypt,there be ſome Date trees that diuide themſelues and are forked in twaine,riſing vp in two trunkes or bodies. In Crete,they haue three, and ſome alſo fiue. The nature of the Palme or Date tree, is to beare ordinarily when they be three yeares old: howbeit in Cyprus, Syria,and Egypt,it is foure yeares firſt ere ſome bring fruit; yea and fiue yeares before others begin: and ſuch neuer exceed a mans heigth, neither haue they any ſtone or wooddy kernel within the Date ſo long as they be young and tender: during which time they haue a pretty name for them,and call them Gelded Dates: and many kindes there be of theſe trees. As for thoſe that be barren and fruitleſſe,all Aſſyria and Perſia throughout, vſe them for timber to make quarters and pamels for ſeeling, waineſcot, and their fine ioyned workes. There be alſo of Date trees coppey woods, which they vſe to fell and cut at certaine times:and euermore they put forth a yong ſpring from the old root and ſtock. Theſe haue in the very head and top,a certain pleaſant and ſweet marow,which they terme, The braine: and therfore thoſe that loue to eat it,wil cut and take it away,& yet the tree will liue neuertheleſſe: a thing

A a thing that ye ſhall not lightly ſee in any others of that kinde. As for thoſe Date trees which haue broader leaues,& the ſame ſoft and pliable,very good to make windings to bind vines and ſuch like,they be named by the Greeks Chamæropes:great abundance there is of them in Creta,but more in Sicily. The wood of Date trees yeelds coles, that in the burning will keep fire long:howbeit a dead flame it is that they make,and nothing quicke. As touching thoſe that be fruitfull,ſome beare Dates with a ſhort ſtone or kernell within;others with a longer: theſe are more ſoft,thoſe be harder. Some carry a kernell of a bony ſubſtance, like the Moon Croiſſant, which many are wont to poliſh with ſome tooth,and in a kind of religion are perſuaded,that it is good againſt witchcraft,& is of vertue to procure womens loue. Some of theſe ſtones be clad and couered with many skins or pellicles,& others with fewer: ye ſhal haue in this Date,thoſe B tunicles thick & groſſe;in that,thinner and more fine. In ſum,if a man would ſearch into them particularly,hee ſhould find fifty ſundry ſorts of Dates ſaue one,with ſeuerall,ſtrange,and barbarous names,and as many different wines made of them. But the principall and moſt excellent of all the reſt,ſyrnamed Roiall Dates,for that they were reſerued for the kings owne mouth of Perſia,were knowne to grow no where els but in Babylon,and in one hortyard or park only of a Bagous(for ſo they vſe to call their eunuches or gelded perſons,and ſuch in times paſt reigned as KK. ouer them:)and this park was euermore annexed to the crowne,and went with the royal Scepter,as a chiefe demaine of the Empire,and paſſed from one Prince to another by ſucceſſion. But in the South-countries and meridionall parts of the world,the Dates ſyrnamed Syagri are highly commended aboue all others,and moſt eſteemed: and next to them,thoſe which be C called Margarides,are in account and good requeſt: theſe be ſhort,white,and round,more like in form to berries and little buttons,than to maſt-fruit and Dates indeed:whereupon they took their name of Pearls,which they do reſemble. It is reported,that in the city Chora,there is one of theſe trees that bears Dates like to Pearles;as alſo another that carries the Dates Syagri. I my ſelfe verily haue heard ſtrange things of this kind of tree, and namely in regard of the bird Phœnix,which is ſuppoſed to haue taken that name of this Date tree [called in Greeke φοίνιξ] for it was aſſured to me,that the ſaid bird died with that tree, and reuiued of it ſelfe as the tree ſprung againe. Now at the very time that I wrote this Hiſtory of Natures works,I ſaw the ſame tree with fruit vpon it:the Date that it bears is great,hard,rough in handling,and in taſt reſembling ſome harſh and wild fruit,far different from other kinds of Dates: in ſuch ſort, as I won- D dred not at the name of Syagros,ſo like it taſted to the fleſh and veniſon of a wild Bore in the forreſt,that comes to our board. In a fourth rank of Dates for goodneſſe,are to be ranged thoſe which they call Sandalides,for the reſemblance of ſlippers or pantofles which they vſed in old time,named Sandalio. But in theſe daies they be as rare,as otherwiſe pleaſant; ſo that within the bounds of Æthyopia (a wonderfull matter) there be not aboue fiue of them to be found. After the Sandalides,the Dates Caryotæ are in greateſt requeſt; for they be not only good to eat,but alſo a wine is made of their iuice,which they yeeld in great abundance:for all the peo- E ple of the Eaſt make their ſpeciall drink thereof. But true it is,that this kind of wine is hurtful to the head,and therfore the Greeks gaue it that name. Now as theſe countries aboue ſaid doe affoord plenty of Date trees,and the ſame fruit full enough,ſo Iury alone carries the name and the praiſe for goodneſſe of Dates;and not all Iury neither, but the territory about Ie.icho eſpecially:and yet I muſt needs ſay,that there be garbered very good Dates in the vales of Iury, which be named Archelais,Phaſelis, & Liuias. And theſe Dates of Iury,haue this ſpecial property aboue all others,To be full of a fat white liquor reſembling milk,which hath a certaine taſte of wine,and is exceeding ſweet and pleaſant withall like honey. The drier kind of theſe Dates be thoſe that tooke name of one *Nicolas*,and were called Nicolai:paſſing faire and great they be aboue all others by far;for foure of them laid in a rank one at the end of another, will make a cubit in length. Other Dates there be,not ſo faire to the eie as theſe Caryotæ,but ſurely for pleaſant taſt they may be well their ſiſters,like as they be called thereupon Adelphides. And a third kind there be of the ſame Caryotæ,which they commonly call Pateton: ouer full F they are of liquor,and ſo drunke(as a man would ſay)with their own iuice, that they burſt euen as they hang vpon the tree their mother, yeelding their wine in that manner of their owne accord,as if they were troden with mens feet in a wine-preſſe;and thereupon they got that name. Another kind there is yet by it ſelfe,of thoſe Dates that be drier than the reſt,and they bee very long and ſlender,yea,and otherwhiles not ſtreight, but bending and crooked. As for thoſe

which we dedicate to holy vses,and namely,when we sacrifice and offer oblations to the gods, G
the Iews (a nation aboue all others noted for contempt and mockery of the gods their worship
and diuine seruice) do name Chydæi[i.vile and of no price.] The Dates in Egypt called The-
baides,as also those in Arabia,be all ouer-drie and withered,poore,leane,and thin. Parched as
they be continually with the heat of the sun,a man would deem they were couered with a crust
or shell,rather than with a skin or pill. Go further into Æthiopia,there they be so dry that they
will soon crumble into pouder like meale;and indeed they make thereof their bread,when it is
tempered and wrought with water. These Dates be round, and bigger than a good apple;and
they grow vpon a plant or shrub which spreads branches of a cubit length:and the Greeks call
them Cycæ. They hang 3 yeres before they be ripe: and euermore you shall see vpon the tree
Dates ripe,when others come new forth green and small. As for the Dates of Thebais in high H
Egypt,so soon as they be gathered,presently they are put vp into barrels, whiles their naturall
heat is in them;for if that course were not taken with them,it would soon exhale and vanish a-
way: yet will they decay and rot,if they be not baked againe in the ouen. As touching all other
Dates,they seeme to be the common and vulgar sort,simply called Dates:and yet both the Sy-
rians and K.*Iuba*,hold them for junkets and banketting dishes. For as in some part of Phœnice,
and Cilicia they be called Balani,[i.glandes or mast] so we at Rome terme them by the verie
name of their own country Phœnice,& by no other. And euen of them there be many kindes;
and those di fferent one from another,either in forme,for that some be round,others long,or els
in colour,whiles there be of them red and black: in which regard,a man may obserue in them,
(by report) as great variety as in figs: howbeit the whitest be the best and most commended. I
Great diuersity there is also among them in quantity and bigness, insomuch as yee shall haue
many of them that want nothing of a cubit;and other for them againe no bigger than a beane.
Now as touching the Dates that be barrelled vp and kept,they be such only as come from salt
and sandy grounds,as in Iury,and Cyrenaica in Africk:for those of Egypt, Cyprus,Syria, and
Seleucia in Assyria, will not keepe and be preserued; and therefore they must be spent out of
hand: for which they take good order to franke their swine and feed other cattel fat with them.
The true signe to know a faulty or a stale date, is this, If a certaine white specke or wart which
stucke vpon it when it grew on the branch,be shed and faln off. Now to conclude this treatise,
I thinke it not amisse to set downe for an example, what did betide the souldiers that were of
Alexanders army,who with eating of green dates new ripe,were choked,and so died. In the Ge- K
drosians country,this accident befell vnto them,onely by the nature of the fruit it selfe,eat they
of it as moderatly as they could:but in other parts, their greedy and ouer liberall feeding vpon
them,was their bane. For surely new dates as they come from the tree,are so exceeding pleasant
and delicious,that a man can hardly forbeare and make an end in good time,before hee surfet
of them and catch a shrewd turne.

Chap. V.

¶ *Of the trees in Syria.*

Besides the Date tree,there be other especiall trees in Syria proper vnto that countrey: for L
in the first place there are a kind of Nuts there growing,commonly knowne and called Fi-
sticks. And (by report) this vertue they haue,either taken as meat,or drunke in drink,To re-
sist the sting and biting of serpents. Also out dry * Figs,and a lesser sort than they named Cot-
* called Le- tana come from thence. Also the Damascene prunes,growing vpon the mount Damascus;as al-
gen figs. so the fruit Sebesten are the commodities of Syria:how soeuer they are now familiar here with
vs in Italy. As for Sebesten,there be wines in Egypt made thereof. Also the Phœnicians haue
a lesse kind of Cedars much like to the Iuniper:and two sorts there be thereof, the Lycian and
the Phœnician,which differ in the leafe:for that which hath an hard, sharpe, and prickie leafe,
is called Oxycedrus:full of branches it is besides,and so knurrie,that it is troublesome to the
hand. As for the other Cedar, it hath an excellent smell. Both twaine doe beare a fruit of M
the bignesse of Myrtle leaues,and sweet in tast. Moreouer, of the greater Cedar there bee two
kindes: that which doth blossome,beareth no fruit: and contrariwise, that which is fruitfull,
sheweth no blossome: and in this, the new fruit commeth foorth alwaies before the old of the
former yere be ripe and gathered: also the seed of it is like that of the Cypresse. Some cal this
Cedar,

A Cedar, Cedrelate: whereof commeth the best Rosin. And the timber of it is euerlasting:wher-
fore in old time they were wont to make the images of the gods,of this wood,as it appeares by
the statue of *Apollo Sosianus*,made of Cedar wood,brought from Seleucia. In Arcadia there is a
tree like the Cedar,but in Phrygia it is called a shrub.

Chap. VI.

¶ *Of the Terebinth.*

Moreouer, in Syria grows the Terebinth or Terpentine tree. The male beareth no fruit.
The females be of two sorts:the one carrieth red grains of the bignesse of Lentils, the o-
ther bring forth pale seeds. This fruit of the Terebinth ripeneth with grapes. Vpon the
B mountaine Ida neere Troas,it is as big as a beane,more pleasant to smell to,and glutinous like
Rosin,if a man handle it. But in Macedonie the tree is but short, and spreadeth branches like a
shrub:contrariwise,about Damascus in Syria,it is very great and tall. The timber of it is verie
tough,continueth a long time,and neuer shrinks for age: of colour blacke,but passing faire,and
resplendent withall. It puts forth floures in clusters after the manner of the Oliue,but it is red:
and the leaues otherwise grow very thick. It beareth also certaine small cods or bladders full of
a gummy and clammie moisture(which also issueth out of the barke) and out of those bladders
there come forth little flies like gnats.

Also the male Rhus or Sumach of Syria doth beare fruit: wheras the female is barren. This
plant putteth forth leaues like to the Elme,but that they be somewhat longer, and ful of hairs,
C and euermore the steles of the leaues grow contrary one against the other. As for the bran-
ches,they be slender and short,good for curriers to dresse their skins and make leather white.
The seed or graine thereof resembles Lentils:and being ripe,it is red, and commonly with the
grape. The which is called Rhus or Sumach,euen as the tree:a necessarie fruit for many medi-
cines.

Chap. VII.

¶ *Of the Ægyptian and Cyprian Sycomores or Fig-trees.*

D In Ægypt likewise there be found many trees which grow not elsewhere: and principally the
Sycomore,which thereupon is called the Ægyptian Fig-tree. The tree for leafe,bignesse,and
barke,is like vnto the Mulberry tree. It bears fruit not vpon the branches, but out of the very
body of the stocke. And the same is a passing sweet fig,but without any grains at all within. It
doth increase in exceeding great abundance,so it be scraped and clawed only with yron hooks:
for otherwise it will not ripen. Come then foure daies after to gather it,you shall not misse but
find it ripe,and new comming vp in the place. Thus in euery summer you shall haue a 7 fold in-
crease,and the same in much plenty,yeelding also great abundance of milke. And say that you
do not vse the scraping or paring aboue named,yet shal you be sure of 4 fruits in a summer,one
vnder another;but so as the new wil driue the old before it,and cause it to shed and fall before
it be wel ripe,for want of that handling beforesaid. The timber of this tree is counted right
E good and profitable;hauing one singular property by it self. No sooner is it hewed,but presen-
tly it is cast into standing pooles,and there drowned. This is the only way to season, and dry it.
At the first (I say) it sinks downe to the bottom:but afterwards it begins to flote aboue:& with-
out all question,the water which vseth to wet and drench all other tres, soketh and suckes forth
the sap and humidity of this wood. Now when it begins once to swim aloft, it is a signe that it
hath the full seasoning,and is good for building and other workes.

Like to this Sycomore in some sort is a certaine tree in Candy,which is called the Cyprian
fig-tree. For this likewise beareth fruit comming out at the very stock, or the maine armes and
boughes thereof,when they be growne to any thicknesse: but it puts forth certain sprigs with-
F out any leaues at all,and they resemble roots. Now this tree is in body much like to the Pop-
lar,but in leafe,to the Elm. It bears fruit foure times a yeare,and as often doth it bud. But the
green figs will hang so still and neuer ripen,vnlesse they be scarified and skiced so,as the milky
substance may run out. The fruit within,is made like a fig,and hath the same pleasant tast:but it
is no bigger than the Soruis.

Chap. VIII.

¶ Of the cod or fruit called Ceraunia Siliqua [i. Carob.]

THere is a kind of coddy ſhrub which the Ionians call Ceraunia, not vnlike to the Egyptian Sycomore aboueſaid, for the fruit thereof comes likewiſe forth of the ſtock, but yet is contained within a cod: and thereupon it is that ſome haue called it the Egyptian fig tree, but they are groſly deceiued: for it doth not ſo much as grow in Egypt, but in Syria and Ionia, alſo about Gnidos and Rhodes. The tree hath green leaues all the yeare long: it putteth forth white floures of a ſtrong ſmell. From the root there ſpring ſhoots, and about the foot of the tree it bears many yong imps, which are ſuch ſuckers of the ſap, that they draw away all the goodneſſe, and rob the parts aboue of their nouriſhment, whereby the head is yellow, and nothing freſh and green, but fadeth in the top. The fruit of the former yere is gathered about the riſing of the Dog-ſtar the yeare following: and then preſently it brings forth new. Afterwards commeth a bloſſome, and the fruit thriueth and waxeth all Winter, vntill the occultation of Arcturus.

Chap. IX.

¶ Of a tree in Egypt called Perſica: of Cucus, and the Egyptian thorne Acacia.

THere is found in Egypt a certain kind of tree by it ſelf called Perſica, like to a peare tree, but that it is green all the yeare long, and ſheds not the leaues: alſo it beareth fruit continually; for gather to day, and ye ſhall find new to morrow growing forth of the place. The fruit is ripe about the Canicular daies when the Eteſian winds do blow. It reſembleth a Peare, ſaue that it is longer, and incloſed with a ſhel or green husk like the Almond: but where the Almond hath an hard ſhell without as a nut, this is ſoft in manner of a peare or plum, containing the ſtone within: and yet it differs ſomewhat both in ſhortneſſe and tenderneſſe. The fruit is very good meat: and although the exceeding ſweetneſſe thereof entice one to eat ſtill and not giue ouer, yet no danger of ſurfeit enſueth thereupon. As touching the wood of this tree, it is durable, hard, ſtrong, and black withall, in which reſpects it reſembles the Lote-wood very much. They vſed in times paſt to make images and ſtatues thereof, not ſo beautifull altogether, nor of ſo fine a grain as ſome others; but for the timber thereof, which continueth ſure and laſteth long, as that of the tree which we called Balanus. Much whereof growes curbed and crooked, and therefore is good only for ſhipwrights to make keels. But contrariwiſe, the wood of Cucus is highly eſteemed.

A tree this is not vnlike to the Date tree, in this regard eſpecially, that the leaues be good to twiſt and plait for mats & ſuch like: herein is the difference, for that it ſpreads into arms and great boughs. The fruit which it beareth is as much as a man may well hold in his hand, of colour reddiſh or deep ſhining yellow, and the taſte very commendable; for it yeelds a juice between ſoure and ſweet, and therefore wholſome for the ſtomacke. The wooddy ſtone within is great, maſſie, and exceeding hard, whereof they vſe to turne for curtain rings and ſaile pullies. In the belly of it there lieth a ſweet kernell while it is freſh and new. But if it be once dried it paſſeth for hardneſſe, inſomuch as no tooth can chew it, vnleſſe it be ſteeped in ſome liquour many daies before. As for the wood and timber of the tree, it hath a moſt dainty, fine, and curled grain, in which regard the Perſians ſet much ſtore by it.

In the ſame country there growes a thorny plant which the inhabitants make great account of: and eſpecially that which is in colour black, becauſe it wil abide the water, & neuer rot nor putrifie in it, and therefore excellent good for the ribs & ſides of ſhips. As for the white thorn of this kind it will ſoon corrupt and be rotten. But both the one and the other is full of prickes euen to the very leaues. The ſeed lies in certain cods or husks, wherewith curriers vſe to dreſſe their leather in ſtead of galls. The floure this thorne beareth is beautifull, whereof folke make faire garlands and chaplets; profitable alſo beſides and good for many medicines. Out of the barke of this tree there comes a gum likewiſe. But the chiefeſt commoditie and profit that it yeeldeth is this, Cut it down when you pleaſe, it wil be a big tree againe within three yeres. It groweth

groweth plentifully about Thebes in Egypt, among Okes, Oliues, & Peach trees, for the ſpace of 300 ſtadia from Nilus; where the whole tract is all woods and forreſts, and natheleſſe well watered with fountains and ſprings among.

Chap. X.

¶ Of the Ægyptian Plum tree, and other trees about Memphis.

IN thoſe quarters groweth likewiſe the Egyptian Plum tree, not vnlike to the thorn of Acacia next before deſcribed: and this brings forth a fruit as big as a Medler, which neuer is ripe before mid-winter, when the daies be at ſhorteſt. The tree is alwaies greene, and ſheds not the leaues all the yeare long. Within the fruit aforeſaid there is a big ſtone; but the ſubſtance otherwiſe and body thereof is naturally ſo good, and ſo plenteous withall, that the inhabitants make their harueſt of it. When they haue gathered it, they clenſe it, ſtampe it, make it vp into balls and lumps, which they preſerue and keepe. The country about Memphis in times paſt was all wooddy and full of forreſts, wherein grew ſo mighty big trees, that 3 men were not able to fathom them about. But among the reſt there was one by it ſelfe moſt wonderfull, not for any ſtrange fruit that it bare, nor yet for any ſingular vſe and employment; but in regard of an accident obſerued in it, and a ſpecial qualitie that it had. For the tree (forſooth) outwardly reſembleth a thorn, but the leaues are made directly like feathers. Let a man ſhake the boughs neuer ſo little, ſhed they will and fall incontinently, but ſoon after there ſpring vp new in their ſteads.

Chap. XI.

¶ Sundry ſorts of Gum. Alſo of the Cane Papyrus.

THe beſt gum in all mens iudgement is that which comes of the Egyptian thorne Acacia, hauing veins within of checker work, or trailed like wormes, of colour greeniſh, & cleere withall, without any pieces of the bark intermingled among, and ſticking to the teeth as a man cheweth it. A pound thereof is commonly ſold at Rome for three doniers. The gumme that iſſueth from the bitter Almond trees and Cherry trees is not ſo good: but the worſt of all is that which the Plum tree yeeldeth. There runneth likewiſe out of vines a certaine gum that is paſſing good for the bleach, ſcabs, and ſcals in little children. And otherwhiles ye ſhall find ſome in Oliue trees, and that cureth the tooth-ache. Moreouer, the Elme growing vpon Corycus, a mountain in Cilicia, and the Iuniper there, haue a gum, but good for nothing. As for that of the Elme it breeds gnats there. Moreouer, of Sarcocolla [a tree ſo called] there diſtilleth a gum of that name, which Painters and Phyſitions both haue great vſe of. Like it is to Manna Thuris, which is the pouder of Incenſe: and therefore the white is better than the red. Sold it is at the ſame price that the other aboue named. And thus much concerning the trees growing vpon mountains and plains.

Now albeit we are not entred yet into the treatiſe of thoſe plants and ſhrubs which grow either in mariſh grounds or by riuers ſides; yet before we depart out of Egypt we muſt not forget the plant Papyrus, but deſcribe the nature thereof, conſidering, that all ciuilitie of this our life, the memoriall and immortalitie alſo of men after death, conſiſts ſpecially in paper which is made thereof. *M. Varro* writes, that the firſt inuention of making paper was deuiſed vpon the conqueſt of Egypt, atchieued by *Alexander* the Great, at what time as he founded the city Alexandria in Egypt, where ſuch paper was firſt made. For before that time there was no vſe at all (ſaith he) of paper, but men vſed to write in Date tree leaues firſt, and afterwards in the rines and barks of certain trees. Then in proceſſe of time they began to regiſter publique records in rolls and ſheets of lead: and ſoon after priuate perſons ſet downe their owne affaires in linnen books, or els in tables couered with wax. For we read in *Homer*, that before the war of Troy writing tables were vſed. And at the very time when he wrot, Egypt was not all continent & firm land, as now it is. For, as he ſaith, all the Papyrus whereof paper is made, grew in that branch or arm of Nilus, which anſwereth onely to the tract or territorie within the iuriſdiction Sebennitis: but afterward that part alſo was laid to Egypt, by the ſhelves and banks made with the inundation of the ſaid riuer. For, from the Iſland Pharos, which now ioineth cloſe vnto Alexandria,

dria by a bridge or narrow cauſey between, it was a day & nights ſailing with a good fore-wind G
at the poup, to the main land, as *Homer* hath reported. But afterwards, as *Varro* hath written, by occaſion of a certaine enuious ſtrife and emulation which aroſe betweene one of the *Ptolomees* K. of Egypt, and *Eumenes* K. of Pergamus, about the erecting of their great libraries; when *Ptolomæus* ſuppreſſed and kept in all the paper made in Egypt, there was parchment deuiſed by the ſaid *Eumenes* to be wrought at Pergamus of skins. And finally, the vſe was commonly taken vp of both, to wit Paper and Parchment, which continues the perpetuitie and euerlaſting remembrance of men and their affaires. But to returne vnto our plant Papyrus, it growes in the mariſhes of Egypt, or els in the dead ſtanding waters of Nilus, namely in certaine plaſhes and pits whereas the water did ouerflow, and remained ſtill after the riuer was fallen and down againe: and namely ſuch holes and ditches which are not aboue two cubits deep. The root is wrythen H
and crooked, of the thicknes of a mans arme; & the ſcape or ſtalk that riſeth from it hath three ſides with 3 corners triangle-wiſe, not aboue 10 cubits in height, growing taper-wiſe, ſmall and ſharp in the top, where it beareth an head incloſed and round, in maner of a cabbage. Howbeit no feed it carrieth within, neither ſerues the floure for any purpoſe but onely for chaplets to adorne the images of the gods. The inhabitants of Egypt do vſe the root in ſtead of wood, not for fuell only, but alſo to make thereof ſundry veſſels and vtenſils in an houſe. The very bodie and pole of the Papyr it ſelfe ſerueth very well to twiſt and weaue therwith little boats, and the rinds thereof be good to make ſaile-clothes, curtains, mats, and couerlets, clothes alſo for hangings, and ropes. Nay, they vſe to chew and eat it both raw and ſodden: but they ſwallow the I
iuice only down the throat, and ſpit out the groſſe ſubſtance. Moreouer, there is Papyrus found in Syria, about that very lake and meere whereas the ſweet Calamus aboue named grows. Neither vſed king *Antigonus* any other ropes about the tackling of his ſhips, but ſuch as were made hereof. For as yet the vſe of Spartum was not common. Moreouer, it is not long ſince that there was found growing in Euphrates about Babylon, this plant Papyrus, and knowne to ſerue for paper as well as the other in Egypt. And yet for all that, the Parthians will not leaue their old cuſtome to weaue and purſle letters in their cloathes, after the maner of embroderie. Now as touching the writing paper made of Papyrus: after they haue cut it into certaine trunkes, as long or as ſhort as the ſize of their paper, they diuide or ſliue it with the point of a needle or bodkin for the purpoſe, into very thin plates or leaues, but they driue them as broad and large K
as poſſibly they can.

Chap. XII.

¶ Of diuers kinds of Paper, and how writing Paper is made: alſo the triall of good or bad Paper: and the glue or paſt belonging thereto.

THe beſt ſheets or leaues of paper be thoſe which are fet out of the very midſt or heart of the ſtem or ſtalk of Papyrus: and ſo conſequently better or worſe, according as they be nearer or farther from it. In antient time the principall paper and the largeſt was called Hieratica, [*i.* ſacred or holy] as being imployed only about religious and diuine books. But afterwards the flatterers of the Emperor *Auguſtus* named thoſe of the beſt ſort Auguſtæ: like as the ſecond Liviæ, after the name of his wife. And hereupon it came that the paper Hieratica was ſet in a third ranke. Next to them in goodneſſe was reputed the paper Amphitheatrike, which name was giuen vnto it of the place where it was made. The poliſhing and trimming of this paper *Fannius* vndertooke, who ſet vp a ſhop in Rome for the ſelling of it: and ſo skilfull was he and curious in the handling and dreſſing thereof, that by the time hee had done withall and brought it to a perfect fineneſſe, hee made the ſame of a courſe and common paper, to be royall, & fit for the beſt perſons that ſhould vſe it: in ſuch ſort, as there was none in any requeſt to ſpeak of, but it: and called after his name it was Fanniana. As for that which paſſed not thorow his hands, nor had his workemanſhip, it retained ſtill the old bare name Amphitheatrica. M
After this kind of paper followed that which they called Saitica, of a towne or city in Egypt, where great abundance was made thereof of the courſer pieces and refuſe of the ſaid Papyrus. And yet there was another paper, to wit Taniotica, ſo called of a place neere adioyning, made of the groſſer part neere to the bark and outſide: and this they ſold for the weight and no other goodneſſe that it had beſides. As for the merchant Paper or ſhop-paper, called Emporetica, it L
was

A was not for to write in, onely it ſerued as waſt Paper for ſarplers to wrap and packe vp wares in: alſo for coffins or coronets to lap ſpice and fruits in, and thereupon merchants and occupiers gaue it that name. And with this, the very cane it ſelfe is to be ſeene clad outwardly: and the vtmoſt coat thereof is like to a reed or bulruſh, fit for no purpoſe but to make cordage of: and not very good for that vſe neither, vnleſſe it be for the water only, which it wil abide very wel. Now the making of all theſe Papers, was in this ſort, namely, vpon a broad bord wet with the cleare water of Nilus. For the fatty and muddie liquor therof ſerues in ſtead of glew, wherwith at the firſt the thin leafe of the cane Papyrus, ſliued from the reſt, and laid vpon the bourd to the full length (in manner of the warpe) according as the trunke will giue leaue, being cut off at both ends, namely, toward the top and the root, is wet and beſmeared: then is there another laid ouer-
B thwart it, after the order of the woofe, with a croſſe graine to the other: and ſo is the web (as it were) of the Paper performed. Preſſed afterwards it is in certaine preſſes, that both leaues may ſticke together: and then the whole ſheets are dried in the Sun. Which done, they be ſo couched together, that the beſt and largeſt lie firſt, and ſo conſequently in order as they be worſe and of leſſe ſize, vntill you come to the worſt. And one ſcape or trunke lightly of the cane Papyrus, yeelds not aboue 20 ſuch ſheets. Great difference there is in them for the breadth, notwithſtanding the length be all one. The beſt, namely which were taken out of the heart of the cane, beare 13 fingers in breadth. The Hieratica Paper wants two of that number. The Fannian is but ten fingers broad. The common Paper Amphitheatrica, but nine. Saitica yet fewer, and will not beare the ſtroke of the hammer. And as for the merchants Paper, it was ſo ſhort and
C narrow, that it went not aboue ſix fingers. Moreouer, in Paper theſe 4 things muſt be conſidered, that it be fine, well compact, white, and ſmooth. Howbeit, *Claudius Cæſar* the Emperor abated the credite of the Paper Auguſta, that it was no more accounted the beſt: for indeed ſo thin it was, that it would not abide the dent of the pen: beſides, it would not hold inke, but ſhew the letters on the other ſide; and was euermore in danger of blurring and blotting, ſpecially on the back part: and otherwiſe, vnſightly it was to the eie, for that a man might ſo eaſily ſee thorough it. And therefore he deuiſed to fortifie and ſtrengthen the ſaid Paper, and laid another courſe or coat (as it were) ouer the former, in manner of a double woofe. Hee enlarged alſo the breadth of the Paper: for he cauſed it to be a foot broad, yea, and ſome a foot and an halfe, I meane that kind which was called Macrocola, or large Roiall Paper. But herin was a fault, and reaſon found
D it out: for if one leafe of this large Paper were plucked off, the more pages took harme thereby, and were loſt. And therfore the former Claudian Paper, which had but 3 leaues of Papyrus, was preferred before all the reſt. Howbeit, that which was named Auguſtane bare the name for letters miſſiue, and the Liuiane continued ſtill in the owne credite, hauing no property of the firſt and principall, but all in a ſecond degree. The roughneſſe of Paper is poliſhed and ſmoothed either with ſome tooth, or elſe with a Porcellane ſhell: but the letters in ſuch ſlick Paper, will ſoone fade and decay. For by poliſhing, it will not receiue the inke ſo deepe as when it is not ſmoothed, although otherwiſe it will ſhine the better. Moreouer, it falls out many times, that if the humor be not artificially laid, the Paper is very ſtubborn: but this fault is ſoon found out at the very firſt ſtroke of the hammer, or elſe diſcouered by the ſmell, eſpecially if good heed
E were not taken in the tempering therof. As for the ſpots and ſpeckles, the eie will quickly ſpie them: but the long ſtreaks, and veines lying cloſe couched between the paſted places, can hardly be diſcerned before that the letter runs abroad, and ſhewes how in the ſpongeous ſubſtance of the Paper wanting that paſt, the inke will ſinke thorough, and make blots; ſo deceitfull is the making of this Paper. What remedie then? but to be at a ſecond labor to paſt it new againe another way, to wit, with the common paſt that wee vſe, made with the fineſt floure of wheat, and tempered with hote ſcalding water, and a little vinegre mingled therwith. For the joiners glue and that made of gums, is brittle, and will not abide the rolling vp of theſe ſheets into quiers. But they that wil go more ſurely to work, and make an exquiſite paſt indeed, boile the ſoft and tender crums or leauened bread in ſeathing water, and then let it run thorough a ſtrainer, which
F they vſe to this purpoſe. For beſides that the Paper hereby will be more firme, and haue leſſe flawes, it ſurmounts alſo in ſweetneſſe the water of Nilus. Moreouer, all kind of paſt whatſoeuer for this effect, ought neither to be ſtaler than a day old, nor yet freſher and vnder that age. After that it is thus paſted, they beat it thin with the hammer: and a ſecond time runne lightly ouer with new paſt: and then being thus knit & bound faſt again, it is made ſmooth and void of wrinckles,

wrinkles, and finally beaten euen with the hammer, and driuen out in length and breadth. After this manner was that Paper made, wherin were written the bookes and records of the two *Gracchi*, *Tiberius* and *Caius*, with their owne hands, long agoe: the which I saw in the house of *Pomponius Secundus*, a noble citizen of Rome, and a renowmed Poet, almost two hundred yeares after their death. As for the writings of *Cicero*, of *Augustus* late Emperour of famous memorie, and of *Virgill*, we daily see and handle them, by the meanes of Paper so good and durable.

Chap. XIII.

¶ *Of the bookes of Numa.*

WE find many examples in stories, which very directly and mightily do testifie against *M. Varro*, as touching Papers. For *Cassius Hemina* (a most faithfull and ancient writer) in the fourth booke of his Annales, hath reported, That one * *Cn. Terentius* a scribe or publicke Notarie, as he digged and delued in a ground which he had neare to Ianiculum, light vpon a chist, where in lay the bodie of *Numa*, sometime king of Rome. In the same also were found the bookes of the said king. And (as he affirmeth) this happened in that yeare, when *Pub. Cornelius* the sonne of *Lucius*, surnamed *Cethegus*, and *M. Bæbius* sonne of *Quintus*, surnamed *Pamphilus*, were Consuls of Rome: betweene which time and the raigne of *Numa*, by just computation are reckoned 535 yeres. He saith moreouer, That those books were made of the Paper abouenamed. The greater wonder it was, how such kind of books should last so long, especially within the earth, and not putrifie? The thing therefore being so strange, and in manner miraculous, that Paper should continue all that time, I think it not amisse to set down the very words of *Hemina* likewise, as he deliuers them. The world made a wonder (quoth he) how these books could possibly endure so many yeres? but the party who found them yeelded this reason: That within the said coffer about the mids of it, there was a stone foure-square: lapped all about and bound euery way with [waxe] candles in manner of a serecloth: vpon which stone, the foresaid books were laid: and therfore it was (as he supposed) that they did not rot. Moreouer, the books also were embaulmed with the rosin or oile of Cedar, which might be a good reason in his conceit, that the moths came not to them. Now these bookes contained the Philosophie and doctrine of *Pythagoras*: and for that they treated of that Philosophical argument, burnt they were, by order from *Q. Petilius* the Pretor for that time being. The same storie in effect doth *C. Piso Censorinus* (a man who had been Censor) report in the first book of his commentaries: howbeit, he setteth downe their number withall: and saith they were fourteene in all, whereof seuen treated of the Pontificall law, and matters of religion; and as many discoursed of *Pythagoras* his Philosophie. But *Tuditanus* in the thirteeneth booke of the Annales affirmeth, That they were the decretals only of *Numa*, and contained his ordinances. As for *Varro* himselfe, he writeth in the fift booke of Humane Antiquities, that they were in all but twelue. And *Antias* in his second booke reporteth, That two of them were written in Latine, and contained the Pontificial diuinitie and church-matters: and other twaine penned in Greeke, were full of precepts in Philosophie. He also affirmes in his third booke, for what cause the said books by vertue of a publick decree were consumed with fire. But all Historiographers agree in this, That one of the *Sibyls* brought vnto *Tarquinius* the proud three books: of which, two were burnt by her owne selfe: and the third likewise perished with fire, together with the Capitol, during the troubles of *Sylla*. Ouer and besides, *Mutianus*, a man who had been thrice Consul of Rome, hath left on record, that of late, while he was lord gouernor or Lycia, he read in a certain temple an Epistle written by prince *Sarpedon* in Paper, and bearing date from Troy. And I wonder the rather at this, if so be that when *Homer* liued and wrate his Poeme, there was no land of Ægypt as now there is: or why, in case there was such vse of Paper then, himself should write, that in the very same Lycia, *Bellerophon* had writing tables giuen him to deliuer as touching his owne death, and not rather letters missiue wrot in Paper? Wel, howeuer that be, this is certaine, that there is a scarsitie otherwhiles of Paper also, as well as of other commodities: and this cane or reed Papyrus doth many times faile. For not long since, euen in the daies of *Tiberius* the Emperor, in a dearth and want of Paper, there were commissioners deputed and appointed by the Senat of Rome, for the dispensing and distribution of it among the people: otherwise there had been a great mutinie, and tumult at Rome about Paper.

* L. Petilius. Liuie.

Chap.

Chap. XIIII.

¶ *Of the trees in Æthiopia.*

AS touching Æthiopia, and namely that quarter which confineth vpon Ægypt, it hath in manner no trees at all of any name, saue those that beare wooll or cotton, concerning the nature of which trees, we haue sufficiently spoken in the description of the Indians, and of Arabia: and yet in very truth, the cotton that is brought from these trees in Æthiopia, comes neerer to wool than any thing els; howeuer the trees be otherwise like to the rest of that kinde: and the burse or cod wherin this woollie substance lyes, is greater, and as big as a Pomegranat. Besides these, there be Date trees also, like to such as we haue before described. As touching other trees, and especially the odoriferous woods within the Isles that lie vpon Æthiopia round about, we haue said enough in the treatise of those Islands.

Chap. XV.

¶ *Of the trees growing in mount Atlas: of Citron tables: of the commendable perfections, and contrariwise of the defaults thereof.*

THE mountaine Atlas (by report) hath a wood in it of peculiar trees that elsewhere grow not, wherof we haue already written. The Mores that border vpon it, are stored with abundance of Citron trees: from whence commeth that excessiue expense and superfluitie about Citron tables made thereof. And our dames and wiues at home (by way of reuenge) vse to twit vs their husbands therwith, when we would seem to find fault with the costly pearls that they do weare. There is at this day to be seen a board of Citron wood, belonging sometimes to *M. Tullius Cicero*, which cost him ten thousand Sesterces: a strange matter, considering hee was no rich man: but more wonderfull, if we call to mind the seueritie of that age wherein hee liued. Much speech there is besides of *Gallus Asinius* his table, sold for eleuen thousand Sesterces. Moreouer, there are two other, which K. *Iuba* sold: the one was prised at 15000 Sesterces, and the other held little vnder. Not long since, there was one of them chanced to be burnt, and it came with other houshold stuff but from the cottages in Mauritania, which cost 140000 Sesterces: a good round summe of money, and the price of a faire lordship, if a man would be at the cost to purchase lands so deer. But the faireſt and largeſt table of Citron wood, that to this day hath beene seene, came from *Ptolomæe* king of Mauritania, the which was made of two demie-rounds or halfe circles, joined together so artificially, that for the closeneſſe of the joint (which could not be discern'd) it was more admirable than possibly it could haue been if it had been naturally of one entire peece: the diameter of it caried foure foot and a halfe, and three inches thicke it was. Likewise another such table there was, surnamed Nomien, of one *Nomius* a slaue, enfranchised by *Tiberius* the Emperour: the square or diametre whereof, was foure foot within 3 quarters of an inch, and the thickneſſe halfe a foot lacking so much. And here I cannot forget and ouerpasse, how that the Emperor *Tiberius* himselfe had a table, which being two inches and three quarters aboue 4 foot in the diametre, and an inch and an half thick throughout, he caused to be plated all ouer, for that *Nomius* his freed-seruant had one so rich and magnificent, made altogether of a knot: a knot (I say) or a knur in the root of the tree, which is the very beautie of the wood, and giues all the grace to tables made therof; and namely, if this knot lie altogether within ground, it is without comparison excellent, and farre more rare and singular than any of the timber aboue, either in the trunk and bodie, or in the armes and boughes of the tree. So that (to say a truth) this costly ware bought so deare, is no better than the superfluous excrescense of trees: the largeneſſe wherof, as also of their roots, may be esteemed by the roundneſſe that they carie. Now are these Citron trees much like to the female Cypresse (especially that of the wild kind) in leaf, in smel, and in body. A mountaine there is in high Mauritania, called Anchorarius, which was wont to yeeld the best and faireſt citron trees, although now it be naked and despoiled of them. But to returne to our tables aforesaid; the principall be they which are either crisped in the length of the vein, or beset here and there with winding spors. In the former, the wood curleth in and out along the graine, and therefore such bee named Tigrinæ, [*i.* Tigre-tables.] In the other, there be represented sundrie tufts as it were enfolded

folded and enwrapped round, and those they call Pantherinæ, [*i.* Panther or Luzerne tables.] G
There be againe, whereof the worke in wainescot resembleth the waues of the sea: and the better grace they haue, and be more esteemed, if they make a shew of the eyes appearing in Peacockes tailes. Next in account and request to these abouenamed, be those that are frisled with small spots standing thicke, as if many graines were gathered together, which they call thereupon (of some resemblance of little bees or flies) Apiatæ, as if they were speckled & filed with their dung. But be the worke and graine of the wood what it will, the color makes all. Here at Rome we set most store by that colour which is like to mead or honied wine, shining and glittering in the veines of the wood. After which considerations, men regard much the breadth & largenes of the whole plank, standing of one entire peece which makes the table. Some take a great pleasure to see in one Citron bourd many of those faults which be incident to trees, to H
wit, the Lignum, for so they call the simple, plain, and bare wood and timber without any branched or curled graine at all, without a shining lustre and glittering glosse, without worke to be seen in any order digested, or at the most (if any be) representing the leaues of a Plane tree. Againe, the resemblance either of the vein or color of a kind of Oke wood called Ilex. Moreouer, the rifts and chinks which timber is subject vnto, by reason principally of wind and Suns heat: or else hairie streakes that be like to such clifts and creuisses. Afterwards men were delighted with a kind of Lamprey veine trauersing and running ouer a black crosse way: and with an outward skin or coat marked with speckes or knottie knurs, like to Poppie heads: and generally with a color all ouer, comming neer to black, or at leastwise bespotted with sundrie colors. The Barbarians for to season the wood of this Citron tree, vse to burie the green bourds or plankes I
thereof within the ground, and besmeare them all ouer with wax. But the artificers and workemen do put them for 7 daies within heaps of corne, and stay 7 daies more ere they be wrought: & a wonder it is incredible, how much of the weight the wood loses by this means. Moreouer, of late daies we haue found the experience by shipwracks, that this timber also wil by nothing in the world be sooner dried nor hardened to last a long time without corruption, than by sea-water. Howbeit, to maintaine these tables best, and to cause them for to shine bright, the way is to rub them with a drie hand, especially after that a man is newly come out of the baines or hot house. Neither catch they any harme or staine, if wine be spilt thereupon: so as it should seeme they were naturally made for wine. To conclude, a tree this is seruing for the ornaments of this life, and the trim furniture of our house, few or none like to it: and therfore me thinks I do not K
amisse to continue the discourse thereof somewhat longer than ordinarie.

Chap. XVI.

¶ *Of the tree Thya, what it is.*

WEll knowne vnto *Homer* was this tree, which in Greeke is named *Θύα, but some call it Thya: for among other daintie odors and sweet woods, he reports, That dame *Circe* (whom he would haue to be reputed as a goddesse) burnt of this Thyon. And therefore much deceiued are they, who vnderstand by that word Thyon, perfumes and odoriferous spice, considering that in one and the very same verse, the Poet maketh mention of the Cedar and Larch tree together with Thyon, whereby it appeareth plaine, that he spake of trees onely. L
Theophrastus, who after the daies of *Alexander* the Great, was the first that wrate the historie of those acts which happened about the 440 yeare from the foundation of Rome, gaue great honour euen then to this Tree, and reported, That all carpenters worke of temples in old time, was made of the same, as of a timber euerlasting, and which in roufes would continue without all putrefaction and corruption whatsoeuer. Moreouer, he writeth, That the wood of the root is so curled and frisled, as none more; and that of no timber besides are more curious peeces of works made, nor of greater price. Ouer and besides, he saith, That the faireſt and goodliest trees of this kind, doe grow about the temple of *Iupiter Hammon*: and some of them also within the countrey Cyrenaica toward the inland parts. But all this while not a word of the foresaid costly tables speakes he in his whole history: and verily before that of *Ciceroes*, there is no record in M
writers of any such tables: whereby it appeareth, that they be come vp but of late daies. Another tree there is likewise of that name, bearing an apple or fruit, which some cannot abide for the strong sauor and bitternes withall, others again like and loue it as well. This tree also beautifieth and fetteth out the house, but I purpose not to bestow many more words thereof.

Chap.

A

Chap. XVII.

¶ *Of the tree Lotus.*

IN the same coast of Africk which regards Italy there growes Lotos, which they cal Celtis, A notable tree it is and of speciall marke: found also here among vs now in Italy, but together with the soile it hath changed the nature. The faireſt and goodliest of them be about the Syrtes and the Nasamones: they be as big and tall as Peare trees, how soeuer *Nepos Cornelius* saith they are but little and low. The leaues be thick cut and indented: otherwise they are like to those of the Ilex or Holme tree. Many sorts there be of the Lote tree, and those for the
B most part according to their diuers and seuerall fruits. Howbeit ordinarily the fruit is as big as a bean, and of yellow colour as Saffron; yet before it is full ripe it changeth into sundry colors like as grapes do. It growes thick among the branches of the tree in manner of myrtle berries, and not like to the cherries in Italy: and in those plants aboue named the meat thereof is so sweet and pleasant, that it hath giuen the name both to a nation and countrey, insomuch as the people be called Lotophagi: and withall, so welcome be all strangers thither, and so well contented with their entertainment, that they forget their owne natiue soile, for the loue they haue to this fruit when they haue once taken to it. By report, whoso eats thereof is free from the diseases of the belly. This fruit is counted the better which hath no kernell within: for there is another kind wherein the said kernell seems as hard as a bone. Moreouer, out of this
C fruit there is preſt a wine like to Mede, which the aboue named *Nepos* saith will not last aboue ten daies: who reporteth besides, that the inhabitants do stamp the berries thereof with wheat or frumentie into a past, and so put it vp in great barrels or such like vessells for the prouision of their food. Moreouer, we haue heard say that whole armies passing to and fro through Africke, haue fed thereof and had no other meat: the wood is blacke of colour, and much sought for it is to make pipes and fifes: of the root whereof hafts of daggers and kniues be made, besides other pretty deuises of small vse. Thus much as touching the nature of the Lote tree in those parts: for there is an herb also of that name [called Melilote.] As for the Egyptian Lotus it is a plant bearing a stalke, and growes in the marishes of Egypt: for when the waters of Nilus are fallen which drencht the countrey, this plant comes vp in the flat and waterie leuell along
D the riuer, with a stem like to the [Egyptian] bean, with leaues thrust close and thick together, howbeit shorter and lesse than those of the bean: in the top of which stalk it bears fruit in maner of an head, for cuts and chamfers and euery thing els like those of Poppy: within which be contained certain grains or seeds resembling Millet. The inhabitants of that countrey do pile together in heaps those heads, and so let them putrifie: afterwards they separate them, wash them faire, and when they be dry, stamp and mold them, and therof make their bread. A strange and wonderful thing it is that is reported besides, namely, That when the Sun goes down, those heads close vp and be couered with leaues, and remaine shut vntill the morning, at what time they open againe: and thus continne this course vntil they be ripe, and that the floure which is white doth fall of it selfe.

E

Chap. XVIII.

¶ *Of the very stalke, scape or stem, and root of Lotus.*

IT is said moreouer as touching this Egyptian Lotus, That in Euphrates the very head of the stalk together with the floure, vseth in the euening to be plunged & drowned vnder the water vntil midnight, and so deep to settle toward the bottom, that a man with his hand cannot reach thereto, nor find any part of it: but after that time it begins to rise by little and little, and by Sun-rising appeares aboue water and opens the floure, and still mounteth higher and higher a good height from the water. This Lotos hath a root as big as a Quince, couered with a
F blacke rinde or barke much like to the huske of a Chestnut. The substance within is white and delectable to eat, but more pleasant being either sodden in water, or rosted vnder embers, than raw: and Hogs will feed fat with nothing better, than with the pills and parings of this root.

Chap. XXI.

¶ *Of Paliurus, the Pomegranate, and the floure of the Pomegranat.*

THe region of Cyrenaica in Africk makes more account of their Paliurus than of Lotus: for the Paliurus shoots forth more twigs and branches, and hath a redder fruit than the Lotus: besides, the fruit and the kernell be eaten apart; and in truth pleasant it is of it selfe alone, but more pleasant with wine; yea, and the iuice therof giueth a better tast to wine if it be put into it. The inland parts of Africk, as far as to the Garamants and the desarts, be wel planted with Date trees faire and great, bearing goodly and pleasant dates, and those especially in that quarter of Barbary which lieth about the temple of *Iupiter Hammon*. But the territorie of Carthage challengeth to it selfe the Punick apple: some call it the Pomegranat, & they haue made seuerall kinds thereof, calling that Apyrinon, which hath no woody or hard kernell within: and indeed these pomegranats are naturally more white, the graines within more pleasant, and diuided with membranes and pellicles between, nothing so bitter as the other: for in both sorts they be framed and fashioned within like to hony combs. As for those pomegranats which haue such kernels or stones, there be fiue kinds of them, to wit, sweet, soure, temperat between both, styptick or austere, and tasting of wine. But the pomegranats of Samos and Egypt haue this difference one from another, That some haue red floures on the head, and are therefore called Erythrocoma: others are white, and such they name Leucocoma. The rind of soure pomegranats is better for tanners and curriors to dresse their leather with, than of the rest. The floure is called Balisteum, both medicinable and also good for to dyt cloth: and hereof commeth the colour of Puniceus [*i.* a light red, or a bay] taking the name of the apple Punicke, or Pomegranat.

Chap. XX.

¶ *Of the Shrubs in Asia and Greece.*

IN Asia & Greece there grow certain shrubs, to wit, Epipactis, which some call Elleborine, with small leaues, which being taken in drink are good against poyson, like as the leaues of Erice [*i.* Heath or Lings] withstand the stinging of serpents.

Chap. XXI.

¶ *Of Thimelæa or Chamelæa, Tragacanth: of Tragium or Scorpio. Also of Myrice, Brya, and Galla.*

THe shrub or bush which beares the graine Gnidium, that some call Linum, is after some writers named Thymelæa, according to others Chamelæa: there be that call it Pyrosachne: some again giue it the name of Cneston, others of Cneoros. This plant howsoeuer it be named resembleth the wild Oliue, but that the leaues be narrower and gummy to the teeth, if a man bite them: for height and bigneſse answerable to the myrtle: the seed thereof is for colour and fashion like to the grain of wheat, and serueth only for phyſicke.

As touching the plant Tragium, it is to be found in the Isle Candy onely. It hath a resemblance of the Terebinth, like as the seed also, which, by report, is most excellent and effectuall to heale wounds made by darts and arrowes. The same Isle hath the bush Tragacanth growing in it, the root whereof is like to that of Bedegnar: and the same Tragacanth is much preferred before that which growes either in Media or Achaia. A pound of Tragacanth is worth 30 deniers Roman. As for the plant Tragium or Scorpio, it grows likewise in Asia. A kind of bramble or brier it is without any leaues, bearing fruit of berries much like to red grapes, whereof there is good vse in phyſicke.

Touching Myrice, which others call Tamarix; and Achaia Brya the wilde; Italy brings it forth: this special propertie it hath, that the tame kind thereof only, namely that which grows in gardens, beareth fruit like galls. In Syria & Egypt this groweth plenteously, and the wood thereof we cal Vnhappy: but the more vnluckie and vnfortunate be those of Greece: for there groweth Ostrys, named also Ostrya, a solitary tree about watery and moist rocks, hauing barke and

and branches like to the Ash, but Peare-tree leaues, saue that they be somwhat longer & thicker, with long cuts or lines wrinkled and riuiled thoroughout: and the seed in forme and color is like to barley. The wood of it is hard and strong: and some say if any peece therof be brought into an house where a woman is in trauaile of child-birth, she shall haue difficult labour, and hardly be deliuered: and whosoeuer lyeth sicke there, shall die a miserable death.

Chap. XXII.

¶ *Of Euonymus or the Spindle tree of Adrachne, Congygria, and Thapsia.*

IN the Island Lesbos, there groweth a tree named Euonymos, no better nor more lucky than Ostrya beforesaid. Much vnlike it is not the Pomegranat tree. As for the leafe that it beares, it is of a middle size between that of the Pomegranat and the Bay; otherwise for shape and softneſse, it resembles that of the Pomegranat: the floure is whiter; the smell and tast wherof is pestiferous and menaces present death: it beares cods like to Sesama, within which be grains or seeds foure square and thick, but deadly vnto all creatures that eat them. The leafe also is as venemous as the graine, yet otherwhiles there ensues therof a fluxe and gurrie of the belly, which saues their life, or else there were no way but one.

Alexander Cornelius called that tree * Eone, whereof the famous ship Argo was made; and like it was (by his saying) to the Oke that carries Misselto, the timber whereof neither water wil putrifie, nor fire consume, no more than the Misselto it selfe. But so far as euer I could learn, no man knew that tree but himselfe. * Or Aesia.

As for the tree Adrachne, all the Greeks in manner take Porcellaine for it; whereas indeed Porcellaine is an hearb, called in Greeke *Andrachne*; so as they differ in one letter: but Aurachne is a tree of the wild forrests growing vpon mountaines, and neuer in the plaines beneath; resembling the Arbut or Strawberrie tree, saue that the leaues be lesse, and neuer fade nor fall. And for the barke, rough and rugged indeed it is not, but a man would say it were frozen and al an'yce round about, so vnpleasant it is to the eye.

Like in leafe to Adrachne, is the tree Congygria, but otherwise it is lesse and lower. This propertie it hath, To lose the fruit wholly, together with the soft downe that it beareth, which they cal Pappus, a qualitie that no other tree hath, beside it. Like to Andrachne also is Aphærce, and beares fruit twice in one yeare, as well as it. The former is ripe, when the grape begins to bud and bloom; the latter, in the beginning of winter: but what manner of fruit this should be, I haue not found written.

As touching the Ferula, it will not be amisse to speake therof among forrain plants, yea and to range it among trees: for (as hereafter we wil distinguish in the diuision of trees) some plants are of this nature, To shew al the wood they haue, where the bark should be; that is to say, without forth: and where the heart of the wood ought to be, they haue nought but a light and spongeous pith, as the Elder; or else nothing at all, as Canes and Reeds. But to come to our Ferula aboue named, it growes in hot countries beyond-sea, with a stalk or stem full of knotty joints. Two kinds be knowne of them: for that which the Greeks call Marthex, groweth tall; but Narthecia is always low. The leaues that put forth at the joints, be euer biggest toward the ground: this plant otherwise is of the nature of Dill, and the fruit is not vnlike. There is not a plant in the world lighter than it for the bigneſse: being easie therfore to weld and carrie, the stem therof serues old men in stead of staues, to rest vpon. The seed of this Ferula or Fennell-gyant, some haue called Thapsia, but herin they be deceiued, for that Thapsia doubtlesse is a kind of Ferula by it selfe, leafed like Fennel, with an hollow stalke, and neuer exceeds in hight the length of a walking-staffe: the seed is like to that of the Ferula, and the root white: cut it, there issues forth milke, stampe it, you shall see it yeeld plenty of juice. Neither is the barke of the root rejected and cast aside, although both it, the milke, and the juice, be very poisons: for surely the root is fruitful to them that dig it vp, and if neuer so little of the aire therof breath vpon them (so venomous it is) their bodies will bolne and swell, their faces will be all ouerrun with a wild fire; to preuent which mischifes, they are forced to anoint their bodies with a cerot. Howbeit as dangerous as they be, Phisicians make vse thereof in the cure of many inward diseases, so they be wel corrected and tempered with other safe medicines. In like maner they say, that the juice

of Thapsia is singular good for the shedding and falling of the haire; also against the blacke & blew markes remaining after stripes: as if Nature furnished not Physicians sufficiently with other wholsom remedies, but that needs they must haue recourse to such poisonful and mischieuous medicines. But this is the cast of them all, to pretend such colourable excuses, for their handling of poisons: and so impudent and shamelesse are some besides, that they bash not to auow the vse of them, bearing vs in hand, that Physick canot stand without poison. The Thapsia in Affricke is the strongest of all others. Some vse to slit or cut the stem about haruest, and in the very root make an hollow trough to receiue the juice that runs downe, and when it is dried, they take it away. Others againe do bruise and stamp in a mortar, both leafe, stalke, and root; and when the juice that is pressed there-from, is thoroughly dried in the Sun, they reduce the same into certain Trochisques. *Nero Cæsar* the Emperor in the beginning of his Empire, gaue great credit to Thapsia: for vsing (as he did) to be a night-walker, and to make many ryots and much misrule in the darke, he met otherwhiles with those that would so beat him, as that he carried away the marks black and blew in his face: but (as he was subtil & desirous to auoid the speech of the people) an ointment he had made of Thapsia, Frankincense, and Waxe, wherewith hee would anoint his face, and by the next morning come abroad with a cleare skin, and no such marks to be seene; to the great astonishment of all that saw him. To conclude, the Ferula maketh the best matches to keep fire, by all mens confession: and those in Ægypt excell the rest, for that purpose.

Chap. XXIII.

¶ *Of Capparis, or Cynosbatos, or Opheostaphyle: and of Sari.*

Likewise in Ægypt growes Capparis, a shrub of a harder and more wooddy substance: well knowne for the seed and fruit that it carries, commonly eaten with meats, and for the most part the Capres and the stalke are plucked and gathered together. The outlandish Capres (not growing in Ægypt) we must take good heed of and beware: for those of Arabia be pestilentiall and venomous: they of Affricke be hurtfull to the gumbs, and principally the Marmarike are enemies to the matrice, and breed ventosities. The Apulian Capres cause vomit, and make lubricitie both of stomack and belly. Some call the shrub Cynosbatos: others Opheostaphyle. Moreouer, there is a plant of shrubs kind, called Sari, it growes along Nilus, almost two cubits high, it beareth an inch in thicknesse, and hath leaues like to Papyr-reed, and men do chew and eat it after the same manner. As touching the root, it is singular good for Smiths cole to burne in their forges, so hard it is and durable.

Chap. XXIIII.

¶ *Of the Royall thorn of Babylon: and of Cytisus.*

I May not ouer-passe that plant, which about Babylon is sowed vpon Thornes only: for otherwise it knowes not how to liue no more than Misseltoe, but on trees. howbeit this plant that I speake of, is sowed vpon that Thorne alone called the Royall Thorne. And a strange thing it is of this plant, That it springs and grows the very same day that it is set or sowed. Now the seasonable time of sowing it, is at the very rising of the Dog-star: and notwithstanding the Suns heat, right quickly ouerspreads it the tree or shrub, on which it is cast. The Babylonians vse to aromatize their wine therwith; and for that purpose are they so carefull to sow it. But the foresaid Thorne tree groweth also about the long walls of Athens [reaching from the tower to the hauen Pyræum.]

Noreouer, a shrub there is, called Cytisus, highly commended and wondrous much praised by *Aristomachus* the Athenian, for feeding of sheep, as also for fatting of swine, when it is drie: and he promiseth and assureth, That an acre of land sowed therwith, although it be none of the best soile, but of a meane and ordinarie rent, will yeeld yearely [*communibus annis*] 2000 Sesterces to the master. As great profit commeth therby, as of the pulse like Vetches, called Erum: but sooner will a beast be satisfied therewith, and a very little therof will serue to fat the same: insomuch as if horses or any such labouring cattell may meet with that prouender, they will not care for barley: neither is there any other grasse or fodders, that yeeldeth more or better milke,

milke than it: but that which passeth all, the pasturage of Cytisus, preserueth sheep, goats, and such like cattell, found and safe from all diseases what soeuer. Ouer and besides, if a nourse want milke, *Aristomachus* prescribes her to take Cytisus dry, and seeth it in water, and so to drink it in wine, whereby not onely her milke will come againe in great plenty, but the babe that sucketh thereof will be the stronger and taller. He giueth it also to hens and pullein whiles it is green, or steeped and wet if it chance to be dry. *Democritus* and *Aristomachus* both do promise and assure vs, that Bees will neuer miscarry nor faile, if they may meet with Cytisus to feed vpon. And yet there is not a thing of lesse charge to maintaine than it. Sowne it is commonly in the spring with barley, I mean the seed thereof, as they mean to sow Leekes or Porret seed: or els they set plants and slips thereof from the stalke, in Autumne before mid-winter. If the seed be sowne, it ought to be steeped and moistned before: yea, and if there fall no store of raine after it is in the ground, it had need to be watered. As for the plants when they be a cubit long, are replanted in a trench a foot deepe. Otherwhiles the tender quicke-sets are planted about the Equinoxes, to wit, in mid-March and mid-September. In three yeares they come to their full growth. They vse to cut it downe in the Spring-Equinox, when it hath done flouring: a worke that a very lad or old woman may do, euen such as can skill of nothing besides. This Cytisus is in outward hew white: and in one word, if a man would pourtray the likenes thereof, it resembleth for all the world a shrub of Trifolie or Clauer-grasse, with narrower leaues. Being thus gathered, it is euer giuen to beasts once in three daies. And in Winter, that which is dried ought to be wet before they haue it. Ten pound of it is a sufficient foddering for an horse: and for other small cattell according to the proportion. But by the way this is not to be omitted, that it is good to set garlicke and sow onions seed betweene the rewes and rankes of Cytisus where it groweth, and they will thriue more plenteously. This shrub was first discouered and known in the Iland Cythnus, and from thence translated into all the other Cyclades: and soon after brought to all the cities of Greece; whereupon followed great increase of milke, & plentie of cheese. I maruel therefore very much that it is so geason and rare in Italy: and a plant it is that feareth neither heate nor cold, no iniury of haile, nor offence by snow; and as *Hyginus* saith, it is not afraid so much as of the enemie; the reason is, because the wood thereof is nothing beautifull to the eye.

Chap. XXV.

¶ *Of shrubs and trees growing in our Mediterranean sea, in the red sea, and in the Indian sea.*

Even the very sea affordeth shrubs and trees: but those of the Mediterranean sea be far lesse than of other seas; for the red sea and all the Levant Ocean is full of woods. That which the Greeks call φῦκος, hath no other name in any language. As for Alga, is a word appropriate rather to weeds or sea-herbs, called Reik: but this Phycos is a very shrub, bearing broad leaues of a green colour, which some call Prason, others Zoster. A second kind there is of Phycos, with an hairy leafe like to Fennell, and groweth vpon rockes. As for the former called Zoster, it is found among the shelues and shallow waters not far from the shore: both the one and the other appeare in the Spring, and be gon in Autumne. That of this kind which groweth in Candy about rocks, is much vsed of dyers for the purple color: and namely on the North part of that Island, and among sponges, for that is most commendable for this purpose. A third sort there is like vnto the grasse called *Coich*, or *Dent-de-chien*, hauing a root full of ioynts, and a stalk likewise in maner of a reed.

Another shrub there is in that sea called Bryon, with leaues like Lettice, saue onely they be more wrinkled and crumpled together: but this growes more inward and farther into the sea. Mary in the deep groweth both Fir and Oke to the height of a cubit. Among these branches, the Cockles and Muskles, and such like shell fishes do settle and sticke vnto them. As for that kind of sea-Oke, some say it is of good vse to dye woll withall: as also that it beareth Mast or Acorns in the deep: the knowledge of all which we come vnto by those that diue into the bottom of the sea, and such as haue suffered shipwracke and escaped. Moreouer, by report, there be other exceeding great trees, and namely about Sycione. As for the sea vine it groweth euerie where: but the fig tree there is without leaues, & hath a red bark. There be also date trees found

in the sea,but as little as shrubs. Without *Hercules* pillers,or the streight of Gebraltar, there G
are shrubs to be seen, bearing leaues resembling leek blades: and others leaued like to the bay
tree, or to the herbe Thyme: and both kinds being cast vp a land turne into the pumish stone.
But in the East parts it is a wonderous matter to thinke,that so soon as euer a man is past Cop-
tus,he shall find nothing to grow in all the wildernesse,but only a kind of thorne or thistle,cal-
led the thirsty or dry thorne,and the same but here and there in very few places: whereas in the
red sea whole woods do liue,and namely of Baies and Oliues bearing their berries: also when
it raineth,certaine Mushromes,which no sooner be caught with the Suns heat,but they turne
into the pumish stone. As touching the shrubs there growing, they be commonly three cubits
high,and those so full of sea dogs and curres, that a man shall hardly looke out of the ship in
safety,for that many times they will take hold of the very ores and assaile them. The souldiers H
of *Alexander* the Great who sailed into India made report,That the branches and leaues of the
sea trees,so long as they were vnder the water looked green,but when they be taken forth, pre-
sently dried with the heate of the Sun,and became salt. Also,that about the shore they found
stony rushes and reeds,like vnto naturall rushes indeed. Moreouer,in the deep sea they light on
certain little trees branched and full of boughes,in colour of an Ox horne, but the head or top
of them was red: handle them in your hand they were as brittle as glasse: put them into the fire
they would be red hot like iron: quench them again,they returned to their former colour. In
the same tract there be some tides so high, that the sea ouerfloweth and coureth the Woods
growing within the Islands,although there be trees in them taller than the highest Planes or
Poplars. And those trees beare leaues like Lawrell,and floures for smel and colour resembling I
the Violet. Their berries be like to Oliues,and those of a pleasant and sweet sauor, which they
bring forth in the Autumne: and their leaues neuer shed but continue all the yeare long. The
lower sort of these trees the floud couereth all and whole: but the greatest beare vp their heads
aboue the sea,whereunto the mariners do fasten and tie their vessels at a high water: but when
it is ebbe,at the very root. Moreouer,by their saying, they saw other trees in the same sea,with
leaues euer green vpon them,carying a fruit like to Lupines. King *Iuba* reports, That about the
Islands of the Troglodites,there groweth a shrub within the sea,called Isidos Plocamos,[*i. Isis*
haire] resembling coral,and void of leaues: cut a branch of it from the stock, it becomes hard,
changeth colour,and is black: if it fall it is so tender that it will breake like glasse. He speaks
moreouer of another called Charito-blepharon, which is of great force in amatorious matters K
to procure loue: and thereof women (quoth he) make them carkanets and pendant ornaments
to hang about their necks. To conclude,he affirmes that this shrub hath a certain intelligence
when a man would take hold of it, and therefore waxeth as hard as an horne, insomuch as it is
able to turne the edge of a knife or bill, that vnneth or hardly it may be cut: but in case it be
intrapped and drawne vp with cords without any edge toole,it presently turneth to be a stone.

THE

A

B

THE FOVRTEENTH BOOK OF THE HISTORIE OF NATVRE,

WRITTEN BY C. PLINIVS SECVNDVS.

Containing the Treatise of Trees bearing Fruit.

The Proeme.

C *Hitherto far forth haue we discoursed of all forreine and strange trees in a manner, such I meane as know not how to liue in any other places but where they naturally first did grow, and which willingly go not into other countries, nor can abide their soile or aire. Good leaue may I now haue to write of Plants and Trees common to all lands, and namely, to ours of Italy, which may seeme to be the very Hort-yard and naturall garden that bare them all. This onely would I aduertise the Readers and Learners to remember, that for this present we purpose to describe their natures and vertues onely, leauing out the manner of husbandrie that belongeth vnto them: albeit in their tending and keeping appeareth the greatest part of their properties, and of Natures workes. And verily, I cannot chuse but maruell still and neuer giue ouer, how it comes to passe, that the remembrance, yea, and the verie names of some trees*

D *which antient Writers haue deliuered in their bookes, should be quite gone and abolished. For who would not thinke, that our life should ere this haue gained much by the Maiestie of the Romane Empire; haue discouered all things by the meanes of the commerce we haue had with the vniuersall world, by the traffick, negotiation, and societie I say that we haue entered into during the blessed time of peace which we haue inioyed? considering that by such trade and entercourse, all things heretofore vnknowne, might haue come to light. And yet for all this, few or none (beleeue me) there are who haue attained to the knowledge of many matters which the old writers in times past haue taught and put in writing. Whereby wee may easily see, that our ancestours were either far more carefull and industrious, or in their industrie more happie and fortunate. Considering withall, that aboue two hundred yeares past* Hesiodus *(who liued in the very infancie of Learning and good letters) began his worke of Agriculture, and set downe rules and precepts for husband-*

E *men to follow. After whose good example, many others hauing trauelled and taken like paines, yet haue put vs now to greater labour. For by this meanes we are not onely to search into the last inuentions of later writers, but also to find out antient time which are forgotten and couered with obliuion, through the supine negligence and generall idlenesse of all mankinde. And what reasons may a man alledge of this drowsinesse, but that which hath lulled the world asleepe? the cause in good faith of all, is this and no other, Wee are readie to forgo all good customes of old, and to imbrace nouelties and change of fashions: mens minds now a daies are amused and occupied about new fangles, and their thoughts be rolling; they wander and roue at random, their heads be euer running; and no arts and professions are now set by and in request, but such as bring pense into our purses. Heretofore whilest Kings and Potentates contained themselues within the Dominion of their owne Nations, and were not so ambitious as now they bee, no maruell if their wits and spirits*

F *kept still at home: and so for want of wealth and riches of Fortune, were forced to employ and exercise the gifts of their minde in such sort as an infinite number of Princes were honoured and renowned for their singular knowledge and learning. Yea, they were more braue in port, and carried a goodlier shew in the World for their skill in Liberall Sciences, than others with all their pomp or riches: beeing fully perswaded and assured, that the way to attaine vnto immortalitie and euerlasting Fame, was by literature and not*

by

by great possessions and large seignories. And therefore as learning was much honoured and rewarded in G
those daies, so arts & sciences tending to the common good of this life daily increased. But afterwards when
the way was once made to inlarge their territories farther in the world, when princes and states beganne to
make conquests and grow rich and mighty, the posterity felt the smart and losse thereby. Then began men to
chuse a Senator for his wealth; to make a judge for his riches; and the election of a ciuill magistrate and mar-
tiall captain, to haue an eie and regard only to goods and substance, to land and liuing: when rents and reue-
nues were the chiefe and onely ornaments that made men seeme wise, iust, politicke, and valiant. Since time
that childlesse estate was a point looked into, and aduanced men into high place of authoritie and power, pro-
curing them many fauorites in hope of succession; since time I say that euery man aimed and reached at the
readiest meanes of greatest lucre and gaine, setting their whole mind, and reposing their full content and ioy H
in laying land to land, and heaping together possessions; downe went the most precious things of this life, and
lost their reputation: all those liberall arts which tooke their name of liberty and freedome (the soueraigne
good in this world which were meet for princes, nobles, gentlemen and persons of great state) for went that
prerogatiue, and fell a contrarie way, yea, and ran quite to wracke and ruine: so as in stead thereof, base slaue-
rie and seruitude be the only waies to arise and thriue by: whiles some practise it one way, some another, by
flattering, admiring, courting, crouching, and adoring: and all, to gather good and get mony. This is the one-
ly marke they shoot at, this is the end and accomplishment of all their vowes, praiers and desires. Insomuch,
as we may perceiue euery where, how men of high spirit and great conceit are giuen rather to honor the vi-
ces and imperfections of others, than to make the best of their owne vertues and commendable parts. And I
therefore we may full truly say, that life indeed is dead: Voluptuousnesse and Pleasure alone is aliue, yea and
beginneth to beare all the sway. Neuerthelesse, for all these enormities and hinderances, giue ouer will not I
to search into those things that be perished and vtterly forgotten, how small and base soeuer some of them be;
no more than I was affrighted in that regard, from the treatise and discourse of liuing creatures. Notwith-
standing that I see Virgil *(a most excellent Poet) for that cause only forbare to write of gardens and hort-*
yards, because he would not enter into such petty matters: and of those so important things that he handled,
he gathered only the principall flowres, and put them downe in writing. Who albeit that he hath made men-
tion of no more than 15 sorts of grapes, three kinds of Oliues, and as many of Peares, and setting aside the
Citrons and Limons, hath not said a word of any apples; yet in this one thing happy and fortunate hee was,
For that his worke is highly esteemed, and no imputation of negligence charged vpon him. But where now K
shall we begin this treatise of ours? What deserueth the chiefe and principall place, but the vine? in which
respect Italy hath the name for the very soueraignty of Vine-yards: insomuch, that therein alone, if there
were nothing els, it may well seeme to surpasse all other lands, euen those that bring forth odoriferous spices
and aromaticall drugs. And yet to say a truth, there is no smell so pleasant whatsoeuer, that out-goeth Vines
when they be in their fresh and flouring time.

Chap. I.

¶ *Of Vines, their nature and manner of bearing.*

VInes in old time were by good reason for their bigneſſe reckoned among trees. I
For in Populonia, a citie of Tuſcan, we ſee a ſtatue of *Iupiter* made of the wood
of one entire Vine, and yet continued it hath a world of yeares vncorrupt, and
without worme. Likewiſe at Maſſiles there is a great ſtanding cup or boll to
be ſeene of Vine-wood. At Metapontum there ſtood a temple of *Iuno*, bearing
vpon pillars of Vine wood. And euen at this day there is a ladder or paire
of ſtaires vp to the temple of *Diana* in Epheſus, framed of one Vine-tree, brought (by report)
out of the Iſland Cypres, for there indeed vines grow to an exceeding bigneſſe. And to ſpeake
a truth, there is no wood more dureable and laſting than is the vine. Howbeit, for my part I
would thinke that theſe ſingular pieces of worke before-named, were made of wild and ſauage M
Vines: for that theſe our tame and gentle vines here planted among vs, are by cutting and pru-
ning euery yere kept downe: ſo as all their whole ſtrength is either drawne without-forth into
branches, or els downward into the root for to put out new ſhoots euer freſh out of the ground:
and regard is only had of the fruit and iuice that they do yeeld diuers waies, according to the
temperature of the aire & climat, or the nature of the ſoile wherin they be planted. In the coun-
trey of Campaine about Capua, they be ſet at the roots of Poplars, and (as it were) wedded
vnto

A vnto them: and ſo being ſuffered to wind and claſpe about them as their husbands, yea, & with
their wanton armes or tendrils to climbe aloft, and with their ioints to run vp their boughes,
they reach vp to their head, yea, and ouertop them: inſomuch as the grape-gatherer in time of
Vintage, puts in a clauſe in the couenants of his bargaine when he is hired, that in caſe his foot
ſhould faile him, and he breake his neck, his maſter who ſets him a worke ſhould giue order for
his funerall fire and tombe at his owne proper coſt and charges. And in truth Vines will grow
infinitly: and vnpoſſible it is to part them, or rather to pluck them from the trees which they
be ioined and coupled vnto. *Valerianus Cornelius* making mention of many properties and ſingu-
larities of a vine, thought this among the reſt worthie of eſpeciall note and remembrance, that
one onely ſtocke of a vine was ſufficient to compaſſe and inuiron round about a good ferme-
B houſe or country meſſuage, with the branches & pliable ſhoots that it did put forth. At Rome
there is one vine growing within the cloiſtures of the Portches and galleries built by the Em-
preſſe *Liuia*, which running and trailing vpon an open frame of railes, coureth and ſhadoweth
the ouert allies made for to walke in: and the ſame Vine yeeldeth one yeare with another a
dozen Amphores of good new wine yearely. An ordinarie thing it is, that Vines will ſurmount
any Elms where ſoeuer, be they neuer ſo tall and lofty. It is reported, that *Cyneas* the embaſſador
of K. *Pyrrhus*, wondring at the vines of Aricia, for that the grew and mounted ſo high; would
needs taſte of the wine that came of their grapes: & finding it to be hard and tart, merrily ſcof-
fed and ſaid, That by good right and juſtice they had done well, to hang the mother that bare
ſuch vnpleaſant wine vpon ſo high a gibbet. Beyond the riuer Po in Italy, there is a tree grow-
C ing which the peaſants there cal Rumbotinus, & by another name * Opulus; it puts forth great * *Opitii.*
armes and boughs, and thoſe ſpread abroad and beare a round compaſſe; howbeit, the vines that
be planted at the root of theſe trees, do fill and couer the ſaid boughes: for yee ſhall haue the
very old crooked branches of the Vine (bare as they be and naked of leaues) to wind about the
armes, and crawle in manner of a ſerpent or dragon along the broader and flatter baſe of the
boughes, and then the new ſhoots, top-twigs, and tendrils, wil diuide themſelues to the vtmoſt
branches and ſhoots of the tree, that they will lode and clog her withal. Theſe vines again grow
ſomtime no taller than the ordinary height of a man of middle ſtature, and beeing ſupported
and vnderpropped with ſtakes and forks, cleaue and cling thick together, and in this order fill
whole vineyards. Others alſo there be, which with their exceſſiue creeping vpon frames, with
D their ouergrowne branches, and ſome artificiall help of the maſters hand, ſpred ſo far euery way,
that they take vp wide and large courts, ouerſpreading not only the ſides, but the very middeſt
thereof. See what ſundry ſorts of vines euen Italy alone is able to affoord! But in ſome prouin-
ces without Italy, ye ſhall ſee a vine ſtand of it ſelfe without any prop or ſtay at all, gathering
and drawing in her boughs and branches together: thus indeed ſhe groweth but ſhort, howbeit
ſo cloſe couched and truſſed round, that the thickneſſe makes amends for all. And yet other-
whiles in ſome coaſts the winds are ſo big and boiſterous, that they wil not ſuffer them thus to
grow vpright; as namely in Affrick, and Languedoc, the prouince of Narbon Vines being thus
debarred to run vp in height, reſting vpon their owne ioints and branches, and euer like to thoſe
that be laid along whiles they are a trimming, by deluing about their roots, and pruning their
E ſuperfluous branches, traile and creepe too and fro along the ground, as weeds and herbes; and
all the way as they ſpread, ſuck the humor of the earth into their grapes: by which meanes, no
maruell it is, if in the inland parts of Africke there be found ſome of thoſe grapes bigger than
pretty babes. And in no countrie are the grapes of a thicker skin than thoſe of Affrick, wherup-
on it may well be, that they tooke the name * *Duracina* (i. hauing hard skins.) For infinite ſorts * *Quaſi dau-*
there be of grapes, according to the difference obſerued in their quantity and bigneſſe, in their *ria acinia.*
colour, taſte, ſtones, or kernels: and yet more ſtil, in regard of the diuers wines made of them. In
one place they are of a freſh and bright purple, in another, of a glittering, incarnate, and roſate
colour: and ye ſhall haue them of a faire and liuely greene. As for the white and black grapes,
they be common euery where. The grapes Bumaſti haue their name, for that they be ſo ſwel-
F ling and round, like ſtrutting paps or dugs. The Date-grapes Dactyli, are long, both grape and
kernel, faſhioned in manner of fingers. Moreouer, Nature ſeems to take her pleaſure and make
good ſport in ſome kind of them, where ye ſhal find among them ſome that be exceeding great,
others again that be as ſmall, howbeit pleaſant they are, and as ſweet as the reſt: and ſuch be cal-
led Lepторhagos. Some laſt al winter long, being knit in bunches together, & ſo hanged aloft

arch-

arch-wise in manner of a vault: with others they make no more adoe, but put them vp presently G
as they come from the Vine, into earthen pots, whiles they be fresh & in their vigor, and after-
wards they are bestowed, well lapped ouer with their leaues, in other greater vessels ouer them,
and for to keep them better, they be stopt close with kernels heaped and piled vpon, sweating
round about, to condite and preserue them in their naturall heat. Others they suffer to be dried
in the smoke of smiths forges, wherby they get the very taft of infumed wine, so ordered in the
smoke. And in truth, *Tiberius Cæsar* the Emperor gaue especial credit & name by his example
to such grapes dried in the furnaces of Africk. For before his time, the Rhetian grapes & those
that came out of the territory of Verona, were ordinarily serued vp to the table first, for the ve-
ry best. As for the Raisins called Passæ, they took that name in Latine of their patience to in-
dure their drying & confiture. Some grapes there be that are condite in Must or new wine, and
so they drinke their owne liquor wherein they lie soking, without any other seething. Others a- H
gaine are boiled in Must abouesaid, vntill they lose their owne verdure, and become sweet and
pleasant. Moreouer, yee shall see old grapes hang still vpon the Vine their mother, vntill new
come: but within glasses, that a man may see them easily through: howbeit, to make them to last
and continue in their full strength, as well those which be preserued in barrels, tuns, and such
like vessels aforesaid, they vse the helpe of pitch or tarre, which they poure vpon the stalks that
the cluster hangs to, and wherewith they stop close the mouth of the said glasse. It it not long
since that there was a deuise found, that wine of it selfe (as it came naturally from the grape
growing vpon the vine) should haue a smack and sent of pitch. And surely this kind of * Pitch
wine, brought the territory about Vienna into great name reputation: & before that this vine I
was known, those of Auern, Burgundy, and the Heluij, were in no request at all. But these deui-
ses as touching vines & wines, were not in the daies of the Poet *Virgil*, who died about 90 yeres
past. But behold what I haue to say more of the Vine tree: the vine wand is now entred into the
camp, and by it our armies are ranged into battalions: nay, vpon the direction thereof depends
the main estate of our soueraigne Empire: for the Centurion hath the honour to carry in his
hand a Vine-rod: the good guidance and ordering whereof aduanceth after long time the cen-
teniers (for a good reward of their valorous and faithfull seruice) from the leading of inferior
bands, to the captainship of that regiment and chiefe place in the army, vnto which the maine
standard of the Ægle is committed: yea, and more than that, the Vine wand chastiseth the tres-
passes and lighter offences of the souldiers; who take it for no dishonor nor disgrace to be thus K
punished at their Centurions hand. Ouer and besides, the planting of Vineyards hath taught
martiall men how to approch the wals of their enemies, to giue an assault vnder a frame deuised
for the purpose, which therupon took the name of Vinea. Lastly, for medicinable vertues in phi-
sick, the Vine is so profitable to mans health, that the vse of it alone is a sufficient remedy for
the distemperature of mans body, caused by wine it selfe.

* *meaning Trag.* Plutarche

Chap. II.

¶ *Of the diuers kindes of vines.*

Democritus was the onely Philosopher euer known, who made profession to seduce all the
sorts and kinds of vines to a certaine number, and indeed he vaunted and made his boast L
that he had the knowledge of all things that were in Greece. All others besides himselfe
and those comming neerer to the truth (as shal appeare more euidently by the variety of wines)
resolutely haue set downe, that there be infinit sorts of Vine-trees. Looke not therefore at my
hands, that I should write of them all, but onely of the principall: for that in truth there bee in
manner as many and as sundry kinds of them, as are of grounds. Wherefore I will content my
selfe, and thinke it sufficient to shew those that be singular and most renowned among them, or
such as haue some secret propriety worth admiration. And first to begin with the Aminean
Vines, all the world giueth them the chiefe praise and greatest name, as wel for their grapes, of
so lasting and durable a nature, as for the wine made thereof, which in all places continues long
in vigor, & is euer the better for the age. And here of there be fiue sundry sorts. Of which, the M
kindly Vines named Germanæ, haue both lesse grapes and grains within, but they burgen and
bloom better than others: and after the floure is gon they can abide both rain and tempest: but
the second kind (which is the greater) is not so hardy: howbeit, lesse subiect to wind and wea-
ther

A ther when they be planted to run vp a tree, rather than to creepe vpon a frame. A third sort are
called Gemellæ, for that their grapes grow double like twins: & they be very harsh and in taste
vntoothsome, howbeit their vertue and strength is singular. The smaller sort of these take harm
by the South wind: but all other winds nourish them, as we may see in the mount Vesuuius, and
the little hils of Surrentum: for in all other parts of Italy, ye shal neuer finde them but wedded
to trees, and growing vpon them. As for the fift kind of these Amminean vines, they be called
Lanatæ, so freezed they are with a kind of down or cotton, insomuch as we need not wonder any
more at the Seres or Indians for their cotton and silken trees. The first kind of these Ammine-
an grapes come sooneſt to their ripeneſſe and perfection, and most quickly do they rot & putri-
fie. Next to these Amminean vines, those of Nomentum are in most account: and for that their
wood is red, some haue called them Rubellæ. These grapes yeeld no great plenty of wine, but
B in stead thereof their stones and kernels, and other refuse remaining, grow to an exceeding big
cake: howbeit, this property they haue. The frost they will indure passing well, lesse harme they
take also by raine than drought, and thriue better, in cold than heat: and therefore, in cold and
moist grounds they excell and haue no fellow. Of these vines, they are more plentifull which
beare grapes with smaller stones, and leaues with lesse cuts and iags indented. As touching the
Muscadell vines, Apianæ, they tooke that name of bees, which are so much delighted in them
and desirous to settle and feed of them. Of two sorts they are: and both carry cotton & down.
Howbeit, this difference is between them, that the grapes of the one wil be sooner ripe than the
other, and yet there is neither of them both but be hasty enough. These Muscadell grapes like
wel and loue cold countries: and yet none sooner rot than they, if showers take them. The mus-
C cadell wines are at the first sweet: but with age become harsh and hard, yea, and red withal. And
to conclude, there is not a grape that ioies more to hang vpon the vine, than it doth. Thus much
of the very floure of Vines, and the principall grapes that be familiar and proper vnto our coun-
trey of Italy, as their native soile.

The rest be strangers come out of Chios or Thasos. As for the Grecke grapes of Corinth,
they be not in goodnes inferior to the Aminean aforesaid. They haue a very tender stone with-
in: and the grape it selfe is so small, that vnlesse the soile be exceeding fat and battle, there is no
profit in planting and tending such vines. The quick-sets of the vine Eugenia were sent vnto vs
from the Tauromenitane hils in Sicily, together with their syrname pretending a noble & gen-
tle race. Howbeit, they are neuer in their kind with vs, but only in the Alban country: for if you
D transplant them, they proue very bastards and changelings presently. And in faith, some vines
there be that take such an affection and loue to a place, that all their goodneſſe and excellency
they wil leaue there behind them, and neuer passe into another quarter whole and entire as they
be in their own nature. Which euidently is to be seen in the Rhetian vine, & that of Savoy and
Daulphnie, of which in the chapter before wee said, that it gaue the taste of pitch to the wine
made thereof: for, these Vines at home in those countries are much renowned for the said taft:
but elsewhere if they be transplanted, they looſe it whole, and no such thing may a man acknow-
ledge in them. Howbeit, plentifull such are, and for default of goodneſſe, they make amends &
recompence in abundance of wine that they yeeld. As for the vine Eugenia, it takes well in hot
grounds. The Rhetian likes better in a temperat soile. The Allobrogian Vine of Sauoy and
E Daulphine delights most in cold quarters: the frost it is that ripens her grapes, and commonly
they are of colour black. Of all the grapes aboue rehearsed, the wines that be made, the longer
they be kept, the more they change colour, and in the end become white, yea, though they came
of blacke grapes, and were of a deep colour at first. Now for all other grapes whatsoeuer, they
are reckoned but base in comparison of the former. And yet this is to be noted and obserued,
that the temperature of the aire may be such, and the soile so good, that both the grapes wil in-
dure long, and the wine beare the age very well. As for example, the Vine Fecenia, and likewise
Bituricа; that bloometh with it, which beare grapes with few stones within: their floures neuer
miscarry, for they euer preuent and come so timely, that they be able to withstand both winde
F and weather. Howbeir, they do better in cold places than in hot: in moist also, than in dry. And
to say a truth, there is not a vine more fruitful, & yeelding such store of grapes growing so thick
together in clusters: but of all things it may not away with variable and inconstant weather: let
the season be staied and setled, it matters not then whether it be hot or cold, for wel it wil abide
the one & the other alone, hold it neuer so long. The lesser of this kind is held for the better.

Howbeit

Howbeit, in chusing of a fit soile for this vine, it is much ado to please and content it: in a fat G
ground it soone rots; in a light and lean, it will not grow at all: very choise it is therefore, dainty, and nice, in seeking a middle temper betweene, and therefore it taketh a great liking to the Sabine hils, and there it loues to be. The grapes that it bears, be not so beautiful to the eie, but pleasant to the tooth: if you make not the more hast to take them presently when they be ripe, they will fall off, although they be not rotten. This vine puts forth large and hard leaues, which defend the grapes well against haile-stones.

Now there are besides certain notable grapes of a middle colour between black and purple; and they alter their hue oftentimes; whereupon some haue named them Varianæ: and yet the blacker they be, the more they are set by: they beare grapes but each other yeare, that is to say, this yere in great plenty, the next yere very little: howbeit, their wine is the better when they H
yeeld fewer grapes. Also there be 2 kinds of vines called Pretiæ, differing one from the other in the bignesse of the stones within the grape: full of wood and branches they are both: their grapes are very good to be preserued in earthen pots: and leafed they be like to Smallach: they of Dyrrhachium do highly praise the Roial vine Basilica, which the Spaniards cal Cocolobis. The grapes grow but thin vpon this plant: they can well abide all South winds, and hot weather: they trouble and hurt the head, if a man eat much of them. In Spaine they make 2 kindes of them; the one hauing a long stone or grain within, the other a round: these be the last grapes that are gathered in time of vintage. The sweeter grape that the Cocolobis bears, the better is it thought: howbeit that which was hard and tart at the first, will turne to be pleasant with keeping; and that which was sweet, will become harsh with age: and then they resemble in taste, the I
Albane wine: and men say, there is an excellent drinke made thereof, to help diseases and infirmities of the bladder. As touching the wine Albuelis, it bears most grapes in the tops of trees, but Visula is more fruitfull beneath toward the root: and therfore if they be set both vnder one and the same tree, a man shall see the diuersitie of their nature, and how they will furnish and inrich that tree from the head to the foot. There is a kind of blacke grape named Inerticula, as a man would say, dull and harmlesse; but they that so called it, might more iustly haue named it The sober grape: the wine made therof is very commendable when it is old, howbeit nothing
Amethystos, *vel sinuath,* hurtfull* for neuer makes it any man drunke: and this property hath it alone by it selfe. As for other vines, their fruitfulnesse doth commend them; and namely aboue all, that which is called Heluenaca; whereof be two kinds; the greater, which some name The long: and the smaller cal- K
led Arca: not so plentifull it is as the former, bat surely the wine thereof goes downe the throat more merily. It differs from the other in the perfect and exquisit roundnesse of the leafe, as it were drawn by compasse: but both the one and the other is very slender, and therefore of necessitie they must be vnderpropped with forkes, for otherwise they will not beare their owne burden, so fruitfull they be. They delight greatly to grow neare the sea-side, where they may haue the vapors of the sea to breath vpon them: and indeed their very grapes haue a sent and smell of a brackish dew. There is not a vine can worse brooke Italy. Her grapes are small, they hang thin and rot euen vpon her: and the wine made thereof, will not last aboue one Summer: and yet on the other side there is not a vine that liketh better in an hungry and lean ground. *Gracinus* (who otherwise compiled his worke out of *Cornelius Celsus* in manner word for word) is of this L
opinion, That this Vine could loue Italy well enough, and that of the owne Nature it misliues not the Countrey; but the cause why it thriueth no better there, is the want of skil and knowledge to order and husband it as it ought to be; for that men striue to ouercharge it with wood, and load it with too many branches: and were it not that the goodnesse of a fat and rich soile maintained it still, beginning to faint and decay, the fruitfulnesse thereof were enough to kill it. This vine (by report) is never blasted: a singular gift verily of Nature, if it be true, That any plant or tree should be so exempt from the jurisdiction (as it were) of the Heauens, that they had no power to doe it harme. The Vine Spionia, which some call Spinea, feareth no extremitie of heat: her grapes prosper well in Autumne and much abundance of rain: This is the only grape that is nourished with foggie mists, and therfore it likes no place well but the territorie M
of Rauenna. The vine Venicula (which is counted one of the best for kindly blooming & shedding the floures, and for grapes most meet to be preserued and kept in pots) the Campaines rather name Sirculus; others Stacula: and they of Tarracina call it Numisiana: and as they say, the grape therof hath no singularity nor vertue in it self, but only according to the soile where it

A is growen: howbeit those that grow about Surrentum, haue the most strength, and are excellent to be presented in vessels; I mean, as fat as vp to the hill Vesuvius: for there also is the vine Murgentina, the best of all those that come out of Sicily, which some call Pompeiana, of Pompeij, a town within the kingdome of Naples: & being got once into Latium, it beares grapes abundantly: like as the vine Horconia in Campaine, yeeldeth plenty of grapes with the best, but good they are for nothing saue onely to be eaten at the table. As for the grape Murica, it will last and indure a long time; it feareth neither winde nor tempest, nor any blast of planet: blacke it is, and hath black stones; howbeit the wine that it maketh, waxes red with age, namely, if it be long kept.

B

Chap. III.

Of the diuers kindes likewise of Vines, according to the propertie of the places and regions where they grow.

HItherto ye haue treated of the sundry sorts of vines in general: now wil we write of them according to the nature of the places and regions, which are proper and familiar vnto them; or as they be mingled one with another, by transplanting or grafting. And first and formost, the vine Tudernis; also Florentia (bearing the name of the city Florence) are peculiar to the Tuscans: but about Aretium, there is no talke both for plenty and goodnesse, but C
of the Talpana, Etesiaca, and Conseminia. The Talpane grape is blacke as the Mouldwarpe, whereof it taketh the name, but yet doth it yeeld a white wine. The Etesiacke vine (so called of the wines Etesiæ) is a deceitfull plant, and often misseth and faulteth; but the more grapes it beareth, the better wine it yeeldeth and more commendable: mary this is strange and wonderfull in it, In the midst of this fruitfulnesse of hers, she giueth ouer suddenly and dieth. The vine Conseminia, bringeth blacke grapes: the wine will not last, but the grapes will keepe and continue passing long: the vintage thereof is fifteene daies after all other: it beareth ordinarily her full burden, but the fruit is onely good for meat to be eaten, and not for wine to be drunke. The leaues of this vine (in manner of the wilde vine Labrusca) before they fall, become as red as bloud. This property happeneth to some others besides; but take it for a certaine token of the worst vines, The vine and grape Irtiola, is proper vnto Vmbria, to the territorie of the Meue- D
nates, and the Picene countrey: like as that which they call Pumula, to the Amiternine region. They haue among them also another kinde, named Bannanica: and although it oftentimes doth not take, yet they loue the plant and cherish it. There is a grape which they call the Borrough or Burgeois grape, after the name of the burrough town Pompeij; and yet there is more plenty of them about the city Clusium: the Tiburtins also, named their grapes after their town Tybur: yet of late daies they haue found another sort, which of the resemblance of oliues, is called the Oliue grape: and in truth, this is the last grape of any account, to this day known to haue bin found out. The Sabins and Laurentines only are acquainted with the grape Vinaciola: for wel I wot, that the vines Gauranæ came first out of the territory of Falerij, and thereupon were named Falernæ: but transplant them from thence whither soeuer you will, they wil very quick- E
ly degenerat in all places, and proue bastard. Moreouer, some haue made a seueral kind by it self of the Tarentine vine, which brings forth an exceeding sweet grape. As for the grapes called Capnias, Bucconiatis, & Tarrupia, there is no vintage of them in the vineyards of the hils about Thurinum, before the cold frost. As for the citizens of Pisæ, they set great store by the grapes Pharie: like as Modenna by those called Prusiniæ; which are very black stone & al: yet the wine thereof with 4 yeres wil turn to a paller and whitish colour. A strange thing it is which men report of a certaine grape, that euermore will turne with the Sunne: and thereupon it is called Streptos: as also that we in Italy are delighted with the French grapes: and they in France beyond the Alpes, are as much in loue with ours in the Picene countrey. *Virgil* hath made mention of other grapes, namely, Thasiæ, Mareotides, and Lageæ, besides many other outlandish F
plants, not at this day to be found throughout al Italy: howbeit there be yet many vines of good mark & wel accepted of, not for any wine that they yeeld, but only for their grapes which they carry: to wit, Ambrosiaca, and Duracina, which may be kept hanging still vpon the vine, without any vessell to inclose them: so durable be they and hardy, against cold, heat, wind, and raine, or any weather whatsoeuer. As for the vine Orthampelos, it needs neither tree to climb on, nor

forkes to ſupport it,but is able to maintain and vphold it ſelfe vpright. But the Dactylides(ſo G
called for that they beare not wood aboue a finger thicke)cannot ſo do: for they muſt be ſhored and vnderpropped. Of all vines,the Columbines yeeld moſt gleaning,for that the gatherers leaue behind them greateſt ſtore of ſmall grapes:and ſo do the purple grapes, named alſo Bimammiæ(as one would ſay,with two teats or bigs)more than the reſt; ſeeing that they beare not ſmall grapes,but put forth new great ones indeed,after the other be gathered and gone. In like manner,the vine Tripedanea,which took that name of the meaſure of 3 foot. Semblably the vine Scirpula,the grapes wherof ſeem as if they were Raiſins of the ſun,dried already. Moreouer in the maritime Alps toward the ſea-ſide,there is a kind of Rhetian vine,but far inferior to H
that other aboue-mentioned and ſo much commended for the relliſh of pitch that it giueth to the wine made of her grapes:for theſe about the Alps be little and ſmall;and albeit they beare grapes thick,yet the wine thereof comes far ſhort of the other,and is more degenerat:howbeit the skin of the grapes is of all other the thinneſt,hauing but one kernel within,which they call Gigarton,and the ſame very ſmall; and a man ſhall not find a bunch, without one or two paſſing great grapes aboue the reſt:there is alſo a kind of black Aminean grape,which ſome name Syriaca:likewiſe the grape of Spain,which of the baſe and common kinds carries the greateſt credit,and is moſt commended. As touching both vines and grapes that run and traile vpon frames;there be thoſe which are called Eſcariæ,good only for to eat, and namely thoſe which haue grains or ſtones like to Ivie berries,as well white as black. Grapes reſembling great dugs, I
named therupon Bumaſti,both black and white,are carried vpon frames in like ſort. But al this while we haue not ſpoken of the Ægyptian and Rhodian grapes, ne yet of the Ounce-grapes, whereof euery one weighes a good ounce,and thereupon tooke that name. *Item*, the grape Pucina,the blackeſt of all others:the Stephanitis alſo,wherein Nature hath ſeemed to diſport her ſelfe,for the leaues run among the grapes in manner of a garland plaited with them. Moreouer, the market-grapes called Forenſes,they grow and are ripe with the ſooneſt;vendible at the very firſt ſight,and ſold with the beſt,and moſt eaſie to be carried from market to market. But contrariwiſe,the aſh-coloured grape Cinerea,the ſilk-ruſſet grape Ravuſcula, the aſſe-hued grape Aſiniſca,pleaſe not the eie,but are preſently reiected: and yet the Fox-tailed grape Alopecis, K
(for that it reſembles Rainards taile) is not ſo diſpleaſant nor ſo much diſcommended as the former. About a cape or creſt of the hill Ida,which they call Phalacra,there is a vine named Alexandrina,ſmal of growth, and puts forth branches of a cubit in length:the grapes be black, as big as beans;the pepin or kernell within,ſoft,tender,and exceeding ſmall;the bunches are crooked,full of grapes,paſſing ſweet;and finally the leaues little,round,and not cut or iagged at all. Within theſe ſeuen yeres laſt paſt,about Alba Eluia,a city in Languedock or the prouince of Narbon,there was found a vine,which in one day both floured and ſhed her floures: by which meanes moſt ſecured it was from all dangers of the weather. They call it Narbonica, or the vine of Languedock: and now it is commonly planted all that prouince ouer, and euery man deſireth to ſtore his vineyard therewith. L

Chap. IIII.

¶ *Notable conſiderations about the husbandrie and ordering of Vineyards.*

THat noble and worthy *Cato*,the firſt of that name,renowned among other dignities for his honorable triumph,and the incorrupt adminiſtration of his Cenſorſhip, and yet more famous and renowned to poſterity for his ſingular knowledge and learning: and namely for the good precepts and ordinances tending to all vertues and commendable parts,which he left in memory for the people of Rome:& principally touching agriculture[as he was by the common voice and generall accord of that age wherein he liued reputed for an excellent husband- M
man,and one who in that profeſſion had neither peere nor fecond that came neere vnto him.] This *Cato* (I ſay)hath in his workes made mention but of a few kinds of vines:and yet ſome of them already be growne out of knowledge, ſo as their verie names are quite forgotten. Yet neuertheleſſe his opinion and judgement would be ſet downe in particular,as it may be gathered out of his whole treatiſe: to the end that we might both know in euery kind of vine which were of moſt account in his daies(to wit,in the 600 yere after the foundation of Rome, about the

A the time that Carthage and Corinth were forced and woon,when he departed this life:) and alſo learn how much we haue profited and proceeded in good husbandry and agriculture,from his death vnto this preſent day;namely for the ſpace of 230 yeares. As concerning vines and grapes therefore,thus much hath *Cato* deliuered in writing,and in this manner following. *All places or grounds* (quoth he) *expoſed to the Sun-ſhine,and which in other regards ſhall be found good for to plant vineyards in,ſee they bee employed for the leſſe Aminean, for both the Eugenian Vines, and the ſmaller Heluine. Item, In euery tract that is more groſſe, thicke, and miſtie, looke that you ſet the greater Aminean,or the Murgentine: the Apician alſo,and the Lucane Vine. All other vines,and the common mingled ſort eſpecially, will agree well enough with any ground. The right keeping of grapes, is in a ſmall thinne wine of the ſecond running. The grapes Duracinæ, and the greater Amineans, are*
B *good to be hanged, or elſe dried before a blacke-ſmithes forge, and ſo they may be well preſerued and goe for Raiſins of the Sun.* Loe what the precepts of *Cato* be; neither are there any of this argument more antient,left vnto vs written in the Latine tongue. Whereby we may ſee,that we liue not long after the very firſt rudiments and beginnings of knowledge in theſe matters. [But by the way,the Amineans laſt named,*Varro* calleth Scantians.] And in very truth, few there be euen in this our age,who haue left any rules in forme of Art, as touching the abſolute skill in this behalfe. Yet ſuch as they be,and how few ſoeuer,we muſt not leaue them behinde, but ſo much the rather take them with vs;to the end it may be knowne,what reward & profit they met with, who trauelled in this point of husbandry: reward,I ſay, and profit, which in euery thing is all in all.

C To begin therefore with *Acilius Sthenelus*[or *Stelenus*,] (a mean commoner of Rome,deſcended from the race of Libertines or Slaues newly infranchiſed) he attained to the higheſt glory and greateſt name of all others:for hauing in the whole world not aboue 60 acres of land lying all in vineyards within the territory of Nomentum,he plaied the good husband ſo well therin, that he ſold them again at the price of 400000 Seſterces. There went a great bruit and fame likewiſe of one *Verulenus Aegialus*,in his time a man but of baſe condition by birth,and no better than the former,(namely,come of the ſtocke of freed-men)who by his labor & husbandry, greatly inriched a domain or liuing at Liternum in Campaine: and the more renowned he was by occaſion of the fauour of ſo many men affectionate vnto *Africanus*,whoſe very place of exile he held in his hands and occupied ſo well: for vnto *Scipio*, the aboueſaid Liternum, appertained. But the greateſt voice and ſpeech of men was of *Rhemnius Palæmon* (who otherwiſe by D
profeſſion was a famous and renowned Grammarian)for that he by the means and helpe of the foreſaid *Sthenelus*,bought a ferme within theſe twenty yeares for 600000 Seſterces in the ſame territorie of Nomentum,about ten miles diſtant from Rome,lying ſomewhat out of the high way. Now is it well knowne farre and neare,of what price and account all ſuch fermes are,and how cheape ſuch ware is lying ſo neere to the city ſide: but amongſt the reſt, this of *Palæmons* in that place was eſteemed moſt cheap and loweſt priſed,in this regard eſpecially,That he had purchaſed thoſe lands,which through the careleſneſſe & bad husbandry of the former owners, lay neglected and fore-let,& were not of themſelues thought to be of the beſt ſoile,choſen and piked from among the worſt. But being entred once vpon thoſe grounds as his owne liuelode E
and poſſeſſion,he ſet in hand to husband and manure them,not ſo much of any good mind and affection that he had to improue and better any thing that he held,but vpon a vaine glory of his own at the firſt,whereunto he was wonderouſly giuen:for he makes fallows of his vine-plots anew,and deſtroyeth them all ouer again,as he had ſeen *Sthenelus* to do with his before: but what with digging,ſtirring,and medling therewith,following the good example and husbandry of *Sthenelus*,hee brought his vineyards to ſo good a paſſe within one eight yeares, that the fruit of one yeares vintage was held at 400000 Seſterces,and yeelded ſo much rent to the lord: a wonderfull and miraculous thing,that a ground ſhould be ſo much improoued in ſo ſmall a time! And in very truth,it was ſtrange to ſee what numbers of people would run thither, onely to ſee the huge and mighty heaps of grapes gathered in thoſe vineyards of his: and ill idle neigh- F
bors about him,whoſe grounds yeelded no ſuch increaſe, attributed all to his deepe learning, and that he went to it by his book,& had ſome hidden ſpeculation aboue other men;obiecting againſt him,that he practiſed Art Magicke,and the blacke Science:But laſt of all, *Annæus Seneca*,eſteemed in thoſe daies a ſingular clerke,and a mighty great man(whoſe ouermuch Learning and exceeding power coſt him his ouerthrowing in the end) one who had good skill and

judgement in the world, and vsed least of all others to esteeme toies and vanities, brought this ferm into a greater name and credit: for so far in loue was he of this possession, that hee bought out *Palemon*, and was not ashamed to let him go away with the pricke and praise for good husbandry, and to remoue him into other parts where he might shew the like cunning: and in one word, paid for these foresaid vineyards of his fourfold as much as they cost, not aboue ten yeres before this good husbandry was bestowed vpon them. Certes, great pity it is, that the like industry was not shewed and imploied in the territories about the hils Cecubus, & Setinus, where (no doubt) it would haue well quit all the cost, considering that many a time afterwards, euery acre of vineyard there, yeelded seuen Culei, that is to say, 140 Amphores of new wine one yere with another. But lest any man should thinke, that wee in these daies haue surpassed our ancestors in diligence, as touching good husbandrie; know he, that the aboue named *Cato* hath left in writing, How of an acre of vineyard there hath arisen ordinarily * ten Culei of wine by the yeare. Certainly these be effectuall examples and pregnant proofes, that the hardy and aduenturous voiages by sea, are not more aduantageous; ne yet the commodities and merchandise, and namely Pearls, which be fet as far as the red sea and the Indian Ocean, are more gainefull to the merchant, than a good ferm and homestall in the countrey, well tilled and carefully husbanded.

*15 according to *Ful. Vrsinus.*

As touching the wines in old time, *Homer* writes, that the Maronean wine made of the grapes growing vpon the sea coasts of Affrick, was the best, & most excellent in his daies. But my meaning is not to ground vpon fabulous tales & variable reports, as touching the excellency or antiquitie of wine. True it is, that *Aristæus* was the first, who in that very nation mingled honey with wine; which must needs be a passing sweet and pleasant liquor, made of two natures so singular as they be of themselues. And yet to come againe to the foresaid Maronean wine, the same *Homer* saith, That to one part therof, there would be but 20 parts of water: and euen at this day, that kind of wine continues in the said land of the same force, and the strength thereof will not be conquered nor allaied. For *Mutianus* who had bin thrice consul of Rome, & one of those that lateſt wrote of this matter, found by experience (being himselfe personally in that tract) that euery sextar or quart of that wine, would beare 8 of water: who reports moreouer, that the wine is of colour blacke, of a fragrant sweet smell, and by age comes to be fat and vnctious. Moreouer, the Pramnian wine (which the same *Homer* hath so highly commended) continueth yet in credit and holds the name still: it comes from a vineyard in the countrey about Smyrna, neere to the temple of *Cybele* the mother of the gods. As for other wines, no one kind apart excelled other.

One yere there was, when all wines proued passing good; to wit, when *L. Opimius* was Consul, at what time as *C. Gracchus* a Tribune of the Commons (practising to sow sedition within the city among the common people) was slaine: for then such seasonable weather happened, and so fauorable for ill fruit, that they called it (Coctura) as a man would say, the ripening time; so beneficiall was the Sun to the earth: and this fell out in the yere after the natiuity and foundation of the city of Rome, 634.

Moreouer, there be some wines so durable, that they haue beene knowne to last two hundred yeares; and are come now by this time to the qualitie and consistence of a rough, sharpe, and austere kind of hony: and this is the nature of all when they bee old: neither are they potable alone by themselues, vnlesse the water be predominant; so tart they are of the lees, and so mufly withall, that they are bitter againe. Howbeit a certaine mixture there is of them in a very small quantity with other wines, that giues a prety commendable taſt vnto them. Suppose now that according to the price of wine in those daies of *Opimius*, euery Amphore were set but at an hundred Sesterces, yet after the vsurie of six in the hundred yearly (which is the ordinary proportion and a reasonable interest among citizens, for the principall that lieth dead and dormant in stock) by the hundred and sixtieth yere after the said Amphor was bought (which fell out in the time that *C. Caligula Cæsar* the son of *Germanicus* was Emperor) no maruell if an ounce in measure of the same wine (to wit, the twelfth part of a Sextarius) cost * so many Sesterces: for as we haue shewed by a notable example, when we did set downe the life of *Pomponius Secundus* the Poet, and the feast that he made to the sayd Prince *Caligula*, there was not a * Cyathus of that wine drawne, but so much was paied for it. Loe what a deale of mony lieth in these wine-cellars, for keeping of wine! And in very truth, there is nothing more gainfull nor groweth to a better

* 12 Sest.

* ¾ an ounce and a halfe.

better reckoning than it, for twenty yeres space after it is laid vp: neither is there greater losse againe by any thing, if ye passe that terme, by reason that the price will not grow and arise accordingly: for seldom hath it bin knowne to this day (and neuer but at some excessiue riot and superfluous expence of wine) that an Amphore hath beene sold for a thousand Sesterces. True it is indeed, that they of *Vienna* only haue made better reckoning of their wines, and sold them dearer, I meane those that giue a taſte of pitch (the seuerall kinds whereof wee haue deliuered before:) but they are thought so to do among themselues only, and for the loue of their countrey, that it might haue the names of wines, so deere and costly. To conclude, this wine of Vienna, is reputed colder than the rest, when the question is of cold drinke, and that the body is to be cooled.

CHAP. V.

¶ *Of the Nature of Wine.*

THe nature and property of wine, is to heat the bowels within, if it be drunke; and to coole the exterior parts, if it be applied outwardly: And here it shall not be amisse to rehearse in this very place, that which *Androcydes* (the noble sage, and wise Philosopher) wrote vnto K. *Alexander* the Great, for to correct and reforme his intemperate drinking of wine, wherein he was very prone and ouermuch giuen. *My good Lord* (saith he) *remember, when you take your wine, that you drinke the very blood of the earth: Hemlock (you know it) is poison to man, euen so is wine to Hemlock.* Now if that Prince had bin so wise as to haue obeied these precepts of his, certes, he could neuer haue killed his best friends as he did, in his fits of drunkennesse. In sum, this may be truely said of wine, that being taken soberly and in measure, nothing is more profitable to the strength of the body; but e contrario, there is not a thing more dangerous and pernicious, than the immoderate drinking thereof.

CHAP. VI.

¶ *Of kindly Wines made of the best Grapes.*

WHo doubteth, that some Wines be made more pleasant and acceptable than others? nay out of the very same vat ye shall haue wines not alike in goodnesse, but that some go before their brethren, pressed though they be at one time, and from the same kinde of grape: which may be long either of the vessell whereinto they be filled, or of some accidentall occasion: and therefore as touching the excellency of wine, let euery man be his own taster and judge. The Empresse *Iulia Augusta* would commonly say, That she was beholden to the Puteine wine for liuing as she did 82 yeares: for she neuer vsed to drink any other. This wine came of the grape that grew along the Adriaticke sea, or Venice gulfe, vpon a stony and raggie hill, not far from the fource or spring of the riuer Timavus, nourished with the vapors breathed from the sea; and many Amphores there were not drawne thereof at a vintage: and by the iudgement of all men, there is not a wine more medicinable than it is. I would thinke verily therefore, that the wine Pycanon (which the Greekes so highly praise) is the very same; for it commeth from the coasts of the Adriaticke sea. The Emperor *Augustus Cæsar* preferred the Setine wine before all others: and after him in manner, all the Emperors his successors, for the ordinary experience they found thereby, That lightly the liquor of that wine would not hinder digestion nor breed raw humors in the stomack: and this wine commeth of the grape about the towne Forum Appij. Before that time, the wine Caecubum was in best account; and the vines which yeelded it, grew to the Poplars in the warlish grounds within the tract of Amyclæ. But now is that Wine cleane gone, as well through the negligence of the peisants of that countrey, as the streights of the place: and so much the rather, by reason of the ditch or trench which *Nero* caused to be made nauigable, beginning at the lake or gulfe Baianus, and reaching as far as to Ostia. In the second degree of excellency, are ranged the wines of the Falerne territories, and principally that which came from the vineyards Faustian: and this excellency it grew vnto by passing good order and carefull husbandry. Howbeit this wine also in these daies beginneth to grow out of name and request, whiles men loue rather to haue plenty from their vines, than otherwise lay for the goodnesse thereof. Now these Falerne vineyards, begin at the Campaine bridge on the left hand as men go to the city-colony erected by *Sylla*, and lately laid to Capua, & vnder the jurisdiction

thereof. But the Faustian vineyards lie about 4 miles from a village neere Cediæ, which village G
is from Sinuessa six miles distant. And to say a truth, this Faustian wine is inferiour to none in
reputation so piercing and quicke it is, that it will burne of a light flame; a propertie that you
shall not see in any other wine. Three sorts there be of these Falerne wines: the first be hard and
harsh; the second sweet and pleasant; the third, thin and small. But some haue distinguished
them in this wise: those that come from the top of the hills, be called Gaurane wines; from the
mids, Faustian; and last of all from the bottom and foot thereof, the Falerne. But by the way
this would not be forgotten, That the grapes whereof be made these wines so singular and ex-
cellent, are nothing pleasant to the taste for to be eaten. As touching the Albane wines from a-
bout Alba neere the city of Rome, they reach to the third ranke in goodnesse, for a certain va-
rietie they haue in their taste: sweetish they be, and yet otherwhiles they haue an vnripe & harsh H
rellish of the wood, & taste like the hedge-wine. In like maner the wines of Surrentum, & name-
ly those of grapes growing only in vineyards, are excellent good for weak persons that be new-
ly recouered of sickneese, so small they are, and wholesome withal. And in truth, *Tyberius Cæsar*
was wont to say, That the Physitians had laid their heads together, and agreed to giue the Sur-
rentine wine so great a name; for otherwise it was no better than a very mild and pleasant vine-
ger: and *C. Caligula* (his successor in the Empire) vsed to say of it, That for a wine that had lost
the heart and was a going, it was very good. The Massike wines, which come from the Gaurane
hils looking toward Puteoli and Baiæ, come nothing behind the rest, but striue to match them
euery way. For as touching the Statane vineyards, that confine and border vpon the Falerne,
their wines doubtlesse are now come to be the principall and chiefe of all the rest: whereby it is I
euidently seen, that euery territory and vine-plot hath their times and seasons, like as all other
things in the world, one while rise and another while fall. For in times past the Calene wines
made of the grapes growing hard by Rome, were wont to go before all others: as also the Fun-
dane vines had their time, as well those that are planted in vineyards, as they which runne vpon
trees: like as those of the other side, neere also to the city of Rome, & namely from Veliternum
and Priuernum. For as touching the wine of Signia, it is held for a medicine only; and by rea-
son of an astringent verdure that it hath, it is excellent good to stay the flux of the belly. In the
fourth place of this race of vines, *Iulius Cæsar* (late Emperor of famous memory) hath ranged,
(for to serue the publick and solemne feasts of the city) the Mamertine wines, from about Mes-
sana in Sicily: for he was the first (as appeares by his letters missiue) that gaue credit and autho- K
rity vnto them. And of those, the Potulane wines (so called of them who first planted the vines
whereof they came) are most commended, and namely those that are vpon the next coast of Ita-
ly. Within the same Sicily, the Tauromenitane vines are highly esteemed, insomuch, as many
times they go for Messana wine, and are so sold by whole pottles. Now for all other wines from
about the coast of the Tuscane sea Northward, good reckoning is made of the Prætutian and
such as come from Ancone: also of the Palmosian wines, which haply tooke that name, for that
the first plant of that vine came from a palme or Date tree. But in the midland parts of Italie
within the firme land, good regard there is of the Cesenatian and Mecænatian wines. Within
the territory of Verona, the Rhetian wine carrieth the price: which *Virgill* ranged next after the
Falerne wines. Anon you come to the wines Adriane, and those that grow far within the tract L
of the Venice gulfe. Now from the nether sea about Lions, ye haue the Latinienſian, the Gra-
uiscane, and the Statonian wines. Throughout all Tuscaney the wines about Luna beare the
name: like as those of Genes, for Liguria. Betweene the Pyrenean hills and the Alpes, Massiles
hath the commendation for wines of a double taste: for the vines there, do yeeld a certain thick
and grosse wine, which they call Succosum, [*i.* full of juice and liquor] good to season other
wines, and to giue them a prety taste. When ye are passed once into France or Gaule, the wine of
Beterræ is in chiefe request. As for the rest within Languedoc and the Prouince of Narbon,
I am not able to auouch any thing for certainty, such a brewing and sophistication of them
they make: what with fuming, perfuming, and colouring them: and would God they put not
in some herbes and drugs among, that be not good for mans body. For certaine it is that they M
commonly buy Aloe to giue the wine both another taste and also a counterfeit color. Moreouer
in the farther and more remote coasts of Italy toward the Ausonian sea, there be wines which
are not without their praise and commendation, and namely those of Tarentum, Scruitium,
and Consentia: likewise of Tempsa, Bauia, and Lucania: howbeit the Thurine wine goeth be-
fore

A fore them all. As for the wines of Lagaria, which be made of the grapes not farre from Gru-
mentum, there goes a right great name of them, by reason that *Messala* vsed ordinarily to drink
thereof, and thereby was supposed to preserue his health so well. Of late daies there be certaine
wines in Campaine growne into credit (like as they haue gotten new names) by good ordering
and husbandrie, or by chance. I know not whether, namely, those of Tribellia, foure miles from
Naples, of Cauleium neare to Capua: and last of all, the Trebulaine wines within their own ter-
ritorie: for before time they were euer counted no better than common wines for euery man
to drink, no more than the Trifolines, from whence they vaunt of their descent. As for the wine
of Pompeij, a towne in the kingdome of Naples, neither it nor the vine whereof it commeth,
will last about ten yeres at the most: after which tearme, the elder they both be, the worse they
B are. Besides, they are found by experience to cause the head-ach, insomuch, as if a man drinke
thereof ouernight, he shall be sure not to haue his head in good tune vntill noone the morrow
after. By which examples aboue rehearsed, it is plaine in my conceit, that the goodnesse of the
wine standeth much vpon the soile and the climate, and not in the grape: so as a needlesse and
endlesse matter it is to reduce all kind of wines to a certaine number, considering that one and
the selfe same Vine planted in diuerse places, hath sundrie operations, and maketh varietie of
wines. Now as concerning the wines of Spaine, the Laletane vineyards are much spoken of for
the plentie and abundance of wine that they yeeld: but those of Tarracon, Arragon, and Lau-
rone, are much praised and renowned for the fine and neat wines which they make. As for the
wines that come out of the Islands, and namely, the Baleares, they are comparable to the very
C best in Italie.

I am not ignorant, that most men who shall read this Treatise, will thinke that I haue omit-
ted and ouerpassed many wines: for euery man likes his own; and as ones fancie leadeth, so goes
the voice and the cry, and there runs the Hare away. It is reported, that one of *Augustus Cæsars*
feeed men (reputed for the finest taster that he had about his court, and who knew best what
would content his pallat, and please his tooth) vpon a time when he tasted the wine that was
for the Emperors bourd, at what time as he made a feast, said to one of the guests at the table,
That the said new wine indeed had a new and strange taste, and was none of the best, and those
that were in name, howbeit (quoth he) this is for the Emperors cup, and willingly will he drink
of no other, notwithstanding it be but a homely wine made hereby in the countrey, and not far
D fetched. And now for a finall conclusion of this matter, I cannot denie but that there bee other
wines which deserue to be numbred among those that are right good and commendable,
howbeit, suffice it shall to haue written of these, which by the common opinion and consent of
the world are held for the better.

Chap. VII.

¶ *Of Wines beyond sea.*

IT remaineth now to speake of outlandish Wines beyond the sea. First and formost therfore
next to those wines renowned by the Poet *Homer*, and whereof we haue written before, best
E esteemed alwaies were the wines of the Islands Thasos and Chios: and namely that of Chios
which they call Arusium or Aruisium. *Erasistratus* the most famous Physician of his time, mat-
ched with these the Lesbian wine, and his authoritie gaue credite vnto it: and this was much a-
bout the six hundred yeare after the foundation of Rome. But in these daies there is no wine to
that of Clazomene, euer since that they began to put therto lesse sea-water for to season it, than
their custome was. As for the wine of Lesbos, it hath a sent and relish of the salt water natural-
ly of it selfe. Neither is the wine that comes from the hil Tmolus in any regard, as a wine to be
drinke alone, but it serues as a sweet cuit to mingle wiith other wines that be hard: for thereby
their greene verdure wil seeme more mild and pleasant, yea, and withall to haue their ripe age:
for no sooner is it tempered therwith, but they tast presently elder than they be. Next to these
F in goodnes, follow in their course the wines of Sycione, Cypres, Telmessus, Tripolis, Berytus,
Tyrus, and Sebennys. As for this wine last rehearsed, it is made in Ægypt, a countrey much re-
nowned for three kinds of grapes there, to wit, Thasia, Æthalos, and Peuce. Next in price & ac-
count be these following, the Hippodomantian, the Mystick, Cantharite, & the Gnidian wine
of the first running and vnpressed, also that of Catacecaumene, a region so called, for that it see-

meth

meth all burnt; of Petra, and Mycone. As for the wine Mesogitis, it is knowne to make head-
G ach: neither is the wine of Ephesus holesome and healthfull, because it is sophisticated with a
kind of cuit hall sodden, called Defrutum, and sea-water. As for the wine of Apamea, by report
it comes very neare to a kind of Mede, and will very well agree with all, like as Praetutium in
Italy. For otherwise, this is the property in generall of al sweet wines, that they will not well sort
together, & be good still. Touching the wine Protagium, it is now growne out of remembrance:
and yet the Physicians of *Asclepiades* his sect and schoole, gaue praise vnto it next the Italian
wines. The learned Physician *Apollodorus*, in his treatise that he compiled of good wines, which
he recommended vnto King *Ptolomaus* for to drinke, as meet for the health of his person, (for
default of Italian wines then vnknown) highly praised the wines in Pontus, & principally that
H which is called Naspercenites: next to it the Orcoetik, the Oeneates, that of Leucadia, of Am-
bracia; and (which he preferreth aboue all the rest) the wine of Peparethus: and yet he said, that
there went the lesse name and opinion of it, because after six yeares it lost the strength and
pleasant tast that it had.

Chap. VIII.

¶ *Seuen kinds of salt wine.*

I THus far forth haue we discoursed of the very floure of good wines, according to the regi-
ons where naturally they come of the grape. Now are we to treat of wines compounded.
I And first, among such wines is that, which they call Bixon (an inuention of the Greeks)
which aboue all others is most esteemed: and great reason, for deuised it was for the cure of ma-
ny maladies, as we shall shew hereafter in our treatise of Physick. The making wherof is in this
manner: Take grapes gathered somwhat before they be ripe: let them lie to drie and parch in
the hot Sunne for three daies, and be turned duly thrice a day: vpon the fourth day presse them
forth for wine, put the liquor vp in barrels, and so let it worke in the Sun. Howbeit, hereto they
put a good quantity of salt sea-water. But this deuise was learn'd first of a false theeuish knaue
who hauing robbed his maister and drunk vp a good deale of his wine, filled vp the vessel again
and made just measure with sea-water. White wine if it be ordered in this sort, is called Leuco-
chrum by the Greekes: but in other nations the like wine so made is named Tethalassomenon.
K As for Thalassites, it is a kind of wine so called, for that the vessels when the wine is new tun-
ned, be cast into the sea, and there let to remaine for a time, by which means the wine will soon
seeme old and readie to be drunke. Furthermore, *Cato* also here among vs hath shewed the way
how to make the Greekish Wine Coum, of our owne Italian Wine: but aboue all he hath set
down an expresse rule, to let it first take the maturitie and perfection 4 yeres in the Sun. As for
the wine of Rhodes, it is much like to that of Coos. But the Phorinean wine is more salt than
the wine of the Isle Coos. Finally, all transmarine or beyond-sea wines are thought in seuen or
six yeares at the least, to come vnto their middle age.

Chap. IX.

¶ *Fourteene sorts of sweet wines.*

L

ALwaies the sweeter that they be in tast, the lesse fragrant & odoriferous they be: the thin-
ner and smaller that they be, the more euer they smell to the nose. Of wines there be four
principall colours, white, yellow, red, and blacke. As for Psythium and Melampsythium,
they be certaine kinds of cuit, hauing a seuerall tast apart by themselues, not resembling wine
indeed. And for Cicibelites made in Galatia, it tasts alwaies like new wine: so doth Halyntium
in Sicily. For as touching Syraeum, which some call Hepsema, & we in Latine Sapa [i. Cuit]
it is a meer artificiall thing, the deuise of mans wit, and no worke of Nature: namely, when new
wine is sodden away a third part: for when it boiles to the halfe, we then call it Defrutum. And
in very deed, all these be inuentions to sophisticate and counterfeit honie. But those beforena-
M med retaine the naturall tast of the grape and the soile whereof they doe consist. Next to these
cuit-wines of Candie, those of Cilicia, Affrick, Italy, and the prouinces confronting thereupon,
are held for the best. Certain it is, That they be made of one grape, which the Greekes call Sti-
ca, and we Apiana [i. the Muscadell] and of another named Scirpula: the which haue been suf-
fered

A fered a long time to hang in the Sunne vpon the Vine vntill they be scorched and parched: or
else ouer the vapor of scalding oile. Some there be that make them of any sweet grapes what so-
euer, so that they be let to concoct before in the Sun, vntil they be white and drie, so farre forth,
as little lesse than half of their weight be consumed: which done, they stamp them and so gent-
ly presse them. Then looke how much liquor they haue pressed foorth, so much pit water they
put to the cake that is pressed, that thereof they may haue a cuit of a second running. But they
that be more curious & take vpon them to make a daintier cuit, dry the grapes in maner afore-
said, but they take forth the stones and graines within: they strip them also from the steeles and
tailes that they hung by: and so after they be well drenched and infused in some excellent wine
vntill they be swelled and plumpe, they presse them. And certainly this fashion is simply the
best of all others. Put to the cake thereof, water as before, and after the same manner yee shall
B haue a cuit of a second sort. Now there is a kind of wine which the Greeks call Aigleuces, that
is to say, always sweet like new wine, of a middle nature between the common simple wine and
the sweet: and this commeth not vnto it by kind, but by heed taken in the boiling; for it is not
suffered to seeth and work: and this is the term, whereby is signified the alteration of new Must
into wine. To hinder therfore that it work not, (as naturally it will) they haue no sooner tunned
or filled it out of the Vat, but immediatly they douse the vessels full of new Must in the water,
and let them there continue till mid-December be past, and that the weather be setled to frost
and cold, and likewise the time expired of the working within the said vessells. Moreouer, there
is another kind of wine naturally sweet, which in Prouance and Languedoc is called Dulce [i.
C sweet] & namely, in the territorie of the Vocontians. For this purpose they let the grapes hang
a long while vpon the Vine, but first they wryth the steele that the bunch hangs to. Some make
incision into the very Vine branch, as far as to the pith and marrow within (to diuert the moi-
sture that feeds the grape:) others lay the clusters a drying vpon tile-houses: and all this is done
with the grapes of the Vine Helucnaca. There be that range in a ranke of these sweet wines,
that which they cal Diacyton. For which effect, they drie the grapes against the Sun (howbeit
in a place well enclosed) for 7 daies together, vpon hardles, 7 foot likewise from the ground: in
the night season they saue them from all dewes, and so on the eight day they tread them in the
wine presse: and thus they draw forth a wine of an excellent sauor and tast both. A kind of these
sweet wines, is that which they name Melitites, [in manner of a Braget, Meade, or Metheglin.]
D Howbeit, different it is from the mead or honied wine which the Latines call Mulsum, made
of old wine that is hard, and a little honie: whereas the foresaid Melitites consists of 5 gallons
of new tart wine still in the verdure, whereto is added one gallon of honie, and a * cyath of salt, *an ounce and a halfe.
and so boiled all together. But I must not forget to place among these sundry kinds of drinke,
the liquor Protropum, for so some call new wine running it self from the grapes, before they be
troden and pressed. But to haue this good, and so to serue the turne, so soon as it is put vp into
proper vessells for the purpose, it must be suffered to work: and afterwards to reboile and work
againe for fortie daies space the Summer following, euen from the very beginning of the dog
daies, and so forwards

E

Chap. X.

¶ *Of weake and second Wines, three kinds.*

THe second wines, which the Greeks call Deuteriæ, *Cato* and we Romans name Lora) can-
not properly and truly be called Wines, being made of the skins and seeds of grapes steep-
ed in water: howbeit, reckoned they are among course household wines for the hines and
meinie to drinke. And three kinds there be of them. For somtime to the tenth part of the new
wine that hath beene pressed out, they put the like quantity of water, and suffer the foresaid re-
fuse of the grapes to soke therin a day and a night: which done, they presse it forth againe. A se-
F cond sort there is, which the Greeks were wont to make in this manner: They take a third part
of water in proportion of the wine that was pressed forth, and after a second pressing, they seeth
it to the wasting of the third part. The third is that which is pressed out of the wine lees, and
this *Cato* cals Phœcatum, [i. Wine of lees.] But none of these wines or drinks will endure aboue
one yeare.

G

Chap. XI.

¶ *What neat wines began of late to be in request in Italie.*

IN this treatise of wines I cannot omit this obseruation: That whereas all the good wines, properly so called and known in the whole world, may be reduced in fourscore kinds or therabouts; two parts of three in this number, may well be counted wines of Italie: which in this regard farre surpasseth all other nations. And hereupon ariseth another thing more deepely to be noted, That these good wines were not so rife nor in such credit from the beginning, as now they be.

H

Chap. XII.

¶ *Obseruations touching wine.*

TO say a truth, Wines began to grow in reputation at Rome, about sixe hundred yeares after the foundation thereof, and not before. For king *Romulus* vsed milk when he sacrificed to the gods, and not wine: as may appeare by the ceremonial constitutions by him ordained, as touching religion; which euen at this day be in force, and are obserued. And king *Numa* his successor made this law Posthumia in his later daies, *Let no man besprinckle the funerall fire with wine.* Which edict no man doubteth but he published and enacted in regard of the great want and scarsitie of wine in those daies. Also by the same Act he expressely did prohi- I
bite to offer in sacrifice to the gods, any wine comming of a Vine-plant that had not beene cut and pruned: intending by this deuise and pretence of religion, to enforce men to prune their Vines, who otherwise would set their minds on husbandrie only and plowing ground for corne, and be slow enough in hazarding themselues for to climbe trees, whereunto Vines were planted. *M. Varro* writeth, That *Mezentius* the king of Tuscane aided the Rutilians of Ardea in their warres against the Latines, for no other hire and wage but the wine and the vines which then were in the territorie of Latium.

Chap. XIII.

¶ *Of the ancient vsage of wine: and the wines in old time.* K

IN ancient time, women at Rome were not permitted to drink any wine. We read moreouer in the Chronicles, That *Egnatius Mecennius* killed his owne wife with a cudgell, for that hee tooke her drinking wine out of a tun; and yet he was cleared by *Romulus*, and acquit of the murder. *Fabius Pictor* in his Annales reports, That a certaine Romane dame, a woman of good worship, was by her owne kinsfolke famished and pined to death, for opening a cupbord, wherein the keis of the wine-sellar lay. And *Cato* doth record, that hereupon arose the manner and custome, That kisfolk should kisse women when they met them, to know by their breath whether they smelled of Temetum: for so they vsed in those daies to tearme Wine: and thereof drunkennesse was called in Latine Temulentia. *Cn. Domitius* (a judge in Rome) in the like case pro- L
nounced sentence judicially against a woman defendant, in this forme, *That it seemed she had drunke more wine without her husbands knowledge, than was needfull for the preseruation of her health*, and therefore afterward definitiuely, That she should lose the benefit of her dowrie. Certes, the Romanes for a long time made great spare of wine. *L. Papyrius* lord Generall of the Romane armie, when he was at the point to joyne battell with the Samnites, made no other vow, but this, That he would offer vnto *Iupiter* a little cup or goblet of wine, in case he atchieued the victorie and woon the field. Ouer and besides, we find in histories, that among donatiues and presents, certaine sextars or quarts of milke haue beene many times giuen, but neuer any of wine. The same *Cato* abouenamed, after his voiage into Spain (from whence he returned with a notable victorie, and in a triumphant manner) in a solemne speech that hee made vnto the people, M
protested in these words and said, *No other wine I haue drunke since I went, than the very marrispers haue.* How farre vnlike was he to men in these daies, who sitting at the table, haue their cup of strong wine by themselues, and giue vnto their guests, for the most part, other small wines to drinke: or if they suffer them to drinke all one and of the best at the beginning of the feast, they will

A will be sure to change and to serue them with worse soon after. In old time, the best wines vsed at feasts were aromatised and spiced with sweet Myrrh, as appeares in the Comedie of *Plautus*, entituled Persa. And yet it should seeme there, that sweet Calamus was to be added besides. And hereupon it commeth, that some haue thought, how our forefathers in times past tooke most delight in such spiced cups and Ippocras wines. But *Fabius Dorsenus* the Poet sufficiently declareth and decideth this point in these verses, when he saith,

Mittebam vinum pulchrum, Murrhinum.

I sent neat wine,
Which hight Myrrhine.

B And againe in his Comedie *Acharistio*:

Panem & Polentam, vinum Murrhinam.

Both bread and grewell I did present,
And Myrrhine wine of pleasant sent.

I see moreouer, that *Scævola*, *Lælius*, and *Atteius Capito* were of the same mind. For in the Comedie of *Plautus* entituled *Pseudolus*, thus it is written:

Quod si opus est vt dulce promat
C *Indidem, ecquid habet?* (Char.) *Rogas?*
Murrhinam, passum, De frutum, mella.

Of dulcet wine if there be need,
What hope is there from thence to speed?
Char. Why aske you that? he furnish'd is
With Murrhin, Cuits, and Meade ywis.

By which a man may see euidently, that Murrhina was not onely counted a wine, but reckoned also among the sweet and delicate wines.

D

Chap. XIIII.

¶ *Of wine store-houses: and of Opimian wine.*

THat there were wine sellars at Rome, and that they vsed there to tun vp Wine in the 633 yeare after the foundation thereof, appeareth plaine by a good proofe of the Opimian wine: and euen in those daies Italy knew her owne good, and what it was to maintaine vineyards. Howbeit, as yet were not those wines in credit, which now are so rife and in so great account. And therfore it is, that all the wines of that time bear the only name of that one Consull, and be called Opimian. And thus afterwards also in processe of time, the wines that came from beyond the seas for a long space, were in much request, euen vntil our grandfathers daies:
E yea, and after that, the Falern wines were in name and called for, as may appeare by that Verse of the Comicall Poet;

Quinque Thasij vini inde depromam, Falerni bina.

To measures fiue of Thacian wine,
I will draw twain of Falerne fine.

In the 675 yeare after the foundation of Rome, *Pub. Licinius Crassus*, and *L. Iulius Cæsar*, Censors for the time being, published an Edict, and proclaimed, *That no man should sell any Greek*
F *wine, or Amincan, but after eight Asses the Amphor or Quadrantum.* For these be the verie expresse words of the said Edict. Now was Greeke Wine of so great price and estimation, that a man was but allowed one draught thereof at a meale, were the cheare neuer so great, and the feast right sumptuous. But what wines were in request ordinarily at the boord, *M. Varro* doth shew in these words: *L. Lucullus* (quoth hee) while he was a boy, neuer saw at his fathers bord Greeke

Greeke wine serued vp but once at a meale, how good soeuer the fare was otherwise. Howbeit, himselfe when he returned out of Asia, in a congiarie or largesse that he gaue vnto the people, made a dole and distribution of more than an hundred thousand measures of gallons apiece. *C. Sentius*, whom of late daies we saw Pretor of Rome, testified, that he neuer saw any wine of Chios brought into his house, before the Physition prescribed and set it down, for the *Cardiaca passio*, or the trembling of the heart, whereto he was subiect. But contrariwise *Hortensius* when hee died left aboue ten thousand barrels full of that Wine vnto his heire. And thus much out of *M. Varro*.

CHAP. XV.

¶ *Of Cæsars bountie and liberalitie in Wine.*

BVt what should we say of *C. Iulius Cæsar* Dictator? In that solemne feast of his which hee made at his triumph, did not he distribute among his guests Falerne wines by whole barrels, and Greek wine of Chios by the ruudlets? After his returne out of Spain with victorie and triumph, he likewise gaue away a largesse of wine as well Chian as Falern. But at the royall dinner which he made when he entred vpon his third Consulship, he caused all the Hall to be serued thorowout with Falern, Chian, Lesbian, and Mamertine wines: which was the first time that euer any man saw the seruice of 4 seuerall wines at one feast. Now in farther proces of time, and namely about 700 yeares after Rome cities foundation, all other Wines began to beare a name and come in request.

CHAP. XVI.

¶ *Of Artificiall or made Wines.*

COnsidering all that hath bin written, I nothing maruel at such an infinite number of compound and artificiall wines deuised in old time, all for the vse of Physick, wherof we will now treat in more ample maner. To begin therefore with wine-Verjuice, called Omphacium, how it should be made, for perfumes and odoriferous ointments, we haue shewed in the former booke. As for the wine named Oenanthinum, it is made of Labrusca, that is to say, the wild Vine, in this wise: Take two pound of the floures of the wild vine aforesaid, let the same be steeped in a measure of new wine containing about 12 * gallons, for the space of 30 dayes, and then be changed out of that vessell into another. Moreouer, the root and grapes of the sayd wild Vine are good for curriers to dresse their leather. The same grapes a little after they haue done blooming are taken to be a singular remedie for to coole those that be troubled with hot and ardent diseases, for naturally they be, as men thinke, exceeding cold: and indeed many of these grapes die in the hot time of Summer before the rest which are called Solstitiales: but all of them neuer come to full and perfect ripenesse. Now if you would keep Pullein from pecking grapes, take these of the wild Vine before they be throughly ripe, mingle and seeth them with their meat: for this will take away all their appetite that way, and breed a loathing after all grapes.

To come now vnto the artificiall wines beforenamed: the first of them, namely that which they call Adynamon [*i.* without strength] is made of very wine in this sort: Take of new white wine 20 Sextars [*i.* quarts:] of water halfe as much: let them boile together vntill the measure of water beforesaid be consumed. Some take of sea water ten Sextares, of raine water as much: and when they be mingled together, suffer them to worke in the hot Sun for the space of fortie daies. This drinke they vse to giue vnto patients, for such maladies as they feare wine would be hurtfull to. A second made wine there is called Millet Wine, after this sort: Take of Millet seed that is ripe, huske, head, and all, a pound and a quarter, put it into two gallons of Must, or new wine: after that it hath lien there infused seuen moneths, let the liquor run from it into another vessell, and keepe it for your vse. As touching the wines of Lotus, as well the tree and shrub, as the herbe, we haue shewed sufficiently how they ought to be made. Moreouer, there be many wines made of sundry fruits, which we will write of hereafter more at large: with a supplement and addition of such interpretations only as be necessarie. And in the first place commeth the date wine, which the Parthians, Indians, and all the Nations of the East in generall

A nerall do ordinarily vse. A Modius or pecke of ripe and sweet dates, which they call Chideæ, they let lie to steep in 3 gallons of water, and so presse for a liquor for the Date wine. Also the Fig-wine Sycites, of the fig which some cal Palmiprimum (as a man would say, Dates fellows, or next to Dates) others Catorchites, is made after the same fashion. But if a man list not to haue it so sweet, in stead of water they vse to put so much of the stones, skins, & seeds of grapes. Of the Fig of Cypres there is an excellent Vinegre made, yea and a better than it of the Alexandrine Figs, to wit, growing vpon the Sycomore. Likewise a wine is made of the fruit in Syria called Siliquæ; as also of peares and all kind of apples. As for the wine of Pomegranates, the Greeks name it Rhoites: besides the fruit of the Corneil or wild Cherry tree, Medlars, Seruices, dry Mulberries, and Pine-nuts, doe yeeld seuerall sorts of wine. As for those pine nuts,
B they must lie steeped in new wines, before the wine be pressed out of them. The rest all be pleasant enough of themselues, and will serue alone for to make wines. The maner of making Myrtle wine, according to the receit and prescription of *Cato*, we will declare soon hereafter. For the Greekes haue another way of their owne, to wit, when they haue sodden in white Must or new wine the tender branches of the Myrtle, together with the leaues, and then stamped the same, they put a pound thereof in three gallons more of Must, and cause it to boile vntill such time as a third part of the wine be consumed. Now that which is made after the same maner of the wild Myrtle berries, they call Myrtidanum; and this will colour and staine ones hands blacke.

Furthermore, the herbs of the garden do afford vs many wines, namely Radish, Sperage, Sa-
C very, & Majoran, Origan, Smallach seed, Southernwood, wild Mints, Rue, Nep, or Calamint, running Thyme, or Horehound. To make these wines, take of the herbes aboue said two handfulls, and when they be stamped, put them into a little barrell of new Wine containing twelue or thirteen gallons, together with a wine quart of Cuit sodden to the thirds, and a pint of sea-water. But for the wine of Nauews, you must take eleuen drams of them, and two quarts of new wine, and so put them together in maner aforesaid. In like sort also the wine Squilliticum is made of the root of Scilla, or the sea Onion.

To proceed vnto wine made of floures, you haue first and formost wine Rosat, after this man-
ner: Take the weight of 40 deniers [*i.* fiue ounces] of Rose leaues well stamped, put them into a linnen cloth, together with a little weight, that they may settle downward, & not flote aloft;
D let them hang thus in 20 Sextars [*i.* three gallons] and two wine quarts of Must; keep the vessell close stopped in any case for 3 moneths, then open it and strain the said floures vnto the liquor. In like maner is there a wine made of the Celtick Spikenard, as also of the Nard sauage. I find also, that they vse to make a kind of spiced wine or Ipocras, not for sweet perfumes and ointments only, but also for to drinke. At first (as I haue shewed) they made these aromaticall wines with myrrh only, but soone after they added thereto Nard Celticke, sweet Calamus, and Aspalathus, either slicing these drugs, or putting them by gobbits into new Must or some dulcet wine. Some aromatise their wine with Calamus, Squinanth, Costus, Spikenard, Amomum,
E Casia, Cinamon, Saffron, Dates, and Azara-bacca, put therto in like maner by gobbets. Others take Spikenard and Malabathrum, of each halfe a pound to two gallons of new wine. Much after the same maner we spice our wines now adaies also, but that we adde pepper and hony ther-
to: which some call Condite, others Pepper wines. Moreouer, there is deuised a Wine called Nectarites, made of Elecampane, named by some Helenium, of others Medica, Symphyton, Idæa, Oreſtion: and there be also that term this herb Nectarea. Now the order of it is to take of the root forty drams, to six Sextars of Must or new wine, and hang it in a cloth together with a weight in maner aboue said. Moreouer, there be wines made of other herbs, to wit, of wormwood, in this sort: Take of Ponticke Wormwood one pound, seeth it in forty Sextars [about six gallons and a halfe] of new Wine, vntill a third part be consumed: or without boiling, put certain handfulls or bunches thereof into a vessell of Wine, and so let it lie infused. After the
F same sort is Hyssop wine made, to wit of three ounces (which is a quarter of a pound) of Cilician Hyssope cast whole as it is into two gallons of Must, and so let them worke together: or else stampe the Hyssop, and so put it into wine. But both these wines are made another maner of way, namely by sowing or setting wormwood & Hyssop at the very root of the Vine-plant: for so *Cato* teacheth vs to make Elleborewine, of blacke Ellebore or Beare-foot growing at the Vine root. And in like maner also is made the Scammonite wine. A wonderfull nature and

propertie these vines haue, to draw and sucke into them the very taste of other herbs and plants G
that are set neere vnto them: for euen so all the grapes about Padua haue a rellish of the Wil-
lows and Osiers that grow there in the marish grounds. Thus the men of Thasos do plant and
sow either Ellebore, or wild Cucumber, or els Scammonea, about their Vines, to make thereof
their diuellish wine Pthorium, so called, because it causes a sleep, and procures vntimely birth.
Of more herbs besides there be other wines made, the vertues of which herbs we wil set downe
elsewhere in place conuenient: and namely of Stœchos, the root of Gentian, of Tragorigа-
num, of Dictamum, Asarabacca, of Daucus, or yellow Carot, Sauge, Panace, Acorus, or Galan-
gal, Conyza, or Cunilago, Thyme, Mandragoras, and Squinanth. More such wines there were
yet, which the Greeks called Scyzinum, Itæomelis, and Lectisпagites; but as they be growne
now out of vse, so the manner of making is vnknown. H

As touching wines made of trees & shrubs, their maner was to seeth the berries of the green
wood of both the Cedars, the Cypres, the Bay, Iuniper, Terebinth, Pine, Calamus, and Lentisk,
in new wine. In like maner, the very substance of Chamelæa, Chamæpithys, and Germander.
Last of all, the floures also of the said plants serue to make wines, namely, by putting into a gal-
lon of new wine in the vat, the weight of ten deniers or drams of the floures.

Chap. XVII.

¶ *Of Hydromel and Oxymel,* [i. *Honied water, and Honied vineger.*]

THere is a wine called Hydromel, made of water and hony onely: but to haue it the better, I
some do prescribe rain water, and the same kept fiue yeares for that purpose. Others who
are more wise and skilfull herein, do take raine water newly fallen, and presently seethe it
vntill a third part be boiled away: then they put therto a third part also of old hony in propor-
tion to it: and so let them stand together in the Sun for forty daies together, from the rising
of the Dog-star. Others, after they haue remained thus mingled and incorporate together ten
daies, put it vp & reserue it close stopped, for their vse; and this is called Hydromel, which be-
ing come to some age hath the very taste of wine, & no place affords better than Phrygia.

Moreouer, Vineger was wont to be tempered with hony, [See how curious men haue bin to
try conclusions in euery thing!] which they called Oxymel; and that in this manner: *Recipe,*
of hony ten pounds or pints: of old vineger fiue pints; of sea salt one pound; of rain water fiue K
Sextares [*i.* a gallon within one quart:] boile them al together at a soft fire, vntil they haue had
ten plawes or walmes: which done, poure them out of one vessell into another, and so let the li-
quor stand and settle a long time vntil it be stale. All these wines & compositions thus brued,
Themison (an Author highly renowned) hath condemned and forbidden expressely to be vsed.
And to say a very truth, it seems that the vse of them was neuer but in case of necessity: vnlesse
a man would beleeue and say, that Ipocras, spiced wines, & those that be compounded of oint-
ments, are Natures work; or that she brought forth plants and trees to no other end, but that
men should drink them down the throat. Howbeit, the knowledge surely of such experiments
be pleasant and delectable vnto men of great wit and high conceit, whose noble spirits cannot
be at rest, but euer inuentiue and searching into all secrets. Now to conclude this point, certain L
it is and past all question, that none of all these compositions, vnles it be those which come to
their perfection by age and long time, will last one yeare full out, nay most of them will not
keep good one moneth to an end.

Chap. XVIII.

¶ *Certaine strange and wonderfull sorts of wine.*

WIne also hath prodigious and miraculous effects: for, by report, in Arabia there is a
wine made, which being drunk will cause barren women to beare children; and con-
trariwise driue men into madnes. But in Achaia principally about Carynia, the wine M
makes women fall into vntimely trauell: nay if a woman great with childe do eat but the verie
grapes, they will slip the fruit of their wombe before their time: and yet both grape and wine
differ not in tast from others. They that drinke the wine comming from the cape Trœzen, ate
thought vnable for generation. It is reported, that the Thasiens do make two kinds of wine of
contrarie

A contrarie operations; the one procures sleep, the other causeth watching. Among them there
is a vine called Theriace, the grape whereof, as also the wine, cureth the stings and biting of ser-
pents, as it were a most especiall Treacle. As for the vine Libanios, it carrieth the odour and
smell of Frankincense, and therefore is vsed in sacrifices to the gods. But contrariwise another
named Aspendios is vtterly condemned for that purpose, and no wine thereof is imployed at
the altar: they say also that no fowle will touch the grapes thereof. There is a kind of grape in
Egypt which they call Thasia, exceeding sweet it is, and looseth the belly. But contrariwise
there be in Lycia that binde as much and cause costiuenesse. The grapes Ecbolides in Egypt
if they be eaten, cause women with child to be deliuered before their time. Some wines there
be that as they lie in the very cellar will turn and proue soure about the rising of the Dog-star;
B but afterward wil recouer their verdure and become quick and fresh again. In like maner there
be wines which vpon the sea will change: howbeit the agitation thereof causeth those Wines
which endure it to the end to seem twice as old as they be indeed.

Chap. XIX.

¶ *What Wines they be that may not be vsed in sacrifices: and what waies there are to sophisticate new wines.*

FOrasmuch as our life stands much vpon religion and diuine seruice, wee are to vnderstand,
That it is held vnlawfull to offer vnto the gods before sacrifice, the Wine of any vine that
hath not bin cut and pruned; or that hath bin smitten or blasted with lightening, or stan-
C ding neere to a jebbit or tree whereon a man hath hanged dead; or the grapes whereof haue bin
troden by men whose legs or feet haue been wounded; neither is that wine allowable for this
purpose, which hath bin pressed and run from the refuse of grape stones and skins once bruised
and crushed in the presse, or last of all, if the grapes haue bin filed by any ordure or dung fal-
len from aboue thereupon. Moreouer, Greeke Wines are reiected from this holy vse because
they haue water in them. Furthermore, the vine it self is holden good to be eaten, namely, when
the burgens and tendrils be first sodden, and afterwards preserued and kept in vineger, brine, or
pickle. Ouer and besides, it were very meet and conuenient to speake also concerning the man-
ner of preparing and ordering of wine, seeing that the Greeks haue trauailed in that point seue-
D rally, and reduced the rules belonging therto, into the form of an Art; and namely, *Euphronius,*
Aristomachus, Coniades, & Hicesias, are therein great professors. The Africans vse to mitigate and
allay the tartnesse of their wines with plastre, yea and in some parts of their country with lime.
The Greeks contrariwise do fortifie and quicken them with clay, with pouder of marble, with
salt or sea water: and in some places of Italy they vse to the same effect, the shauings and scra-
pings of stone-pitch. Also it is an ordinary thing in Italy and the prouinces thereto confining,
for to condite their new wines & to season them with rosin: yea and in some places they min-
gle therewith the lees of other old wine or vinegre. Oftentimes also they make sliber-sauces of
it selfe without any other mixture; namely, when they boile new wine sufficiently to the pro-
portion of the strength, vntill the hardnesse do euaporate, and that it wax mild and sweet: but
being thus ordered, it will not last, they say, aboue one yere. In some countries they vse to seeth
E their new wine to the consumption of a third part, and make it Cuit, with which they are wont
to delay the sharpnes and strength of other wines, & make them pleasant. But both in this kind
of wine and in all other, the vessels ought to be prepared for the purpose, & seasoned with pitch:
the treatise of which we will put off vnto the next booke, where we purpose to treat thereof, and
the manner of making it.

Chap. XX.

¶ *Of diuers kinds of Pitch and Rosins: the manner of the seasoning and confecture of new Wines. Also of Vineger and salt.*

F

AMong trees that yeeld from them a liquid substance, some there be in the East countries,
and others in Europ, which ingender Pitch and Rosin. Asia likewise between both, hath
of either side it some such trees. As for the East, the Terebinths put out Turpentine, the
best and cleerest Rosin of all others: next to them, the Lentiskes also haue their Rosin, which

they call Mastick. After which, the Cipres brings forth a third rosin, but it is of a most sharpe G
and biting taste. All these trees (I say) carry rosin only, and the same thin and liquid: but the
Cedar sendeth forth a thick substance, and good to make pitch & tar. As for the rosin or gum
Arabick, it is white in colour, strong of smell, vntoward and troublesom to him that shall boile
it. That of Iury is harder, yea, and of a stronger sauor than Turpentine. The Siriack gum resem-
bleth the hony of Athens. The Cyprian excelleth all others: of a fleshy substance it is, & like
in colour to hony. The Colophonian is deeper of colour, and reddish: beat it to pouder in a
mortar it proueth white: but it carieth a strong smel with it, which is the reason that the per-
fumers and makers of ointments haue no vse thereof. As for that which the pitch trees of Asia
do yeeld, it is passing white, and the Greeks call it Spagas. All rosins generally will dissolue in
oile. Some think verily, that Potters clay will likewise do the same. But I am abashed & asha- H
med to report, how in these daies the same pitch whereof we speake, should be in so great ac-
count as it is, for making of pitch plaisters, to fetch off the haire of mens bodies, & all to make
them more smooth and effeminat. Howbeit, the maner of seasoning new Must therewith (that
when it is perfect wine, it may smell of pitch, and bite at the tongues end) is to bestrew it with
the pouder of pitch at the first working, the heate whereof is commonly past and gone in nine
daies. And some think that the wine will be the stronger, if the raw and green floure of the Ro-
sin, as it issueth fresh out of the tree, be put therein; for it will quicken a small and weak wine.
Now this mixture and medicine of wine [called Crapula] made thus of rosin, hath contrary ef-
fects: for if the wine be ouer-heady and strong, it allaieth & mortifieth the hurtful force ther-
of: but if it be too weak, or drink dead & flat, it reuiueth againe, and giueth it a strong taste. In I
Liguria, and principally along the Po, they vse to season their wines, and bring them al to their
seuerall perfections in this maner. If the wine when it is new be mighty and strong, they put in
the more of this medicine or confection called Crapula: if it be mild and small, then the lesse
goes into it: and keeping this gage with their hand, they make both good. Some would haue
one wine brued with another, the weaker with the stronger, and so (forsooth) there must needs
arise a good temperature of both together: and verily there is not a thing in the world againe
which hath in the nature thereof so great varietie.

In some countries, if new wine worke of it selfe a second time, it is thought to be a fault and
means to corrupt it: and indeed vpon such a chance & vnhappy accident, it loseth the verdure
and quick tast: whereupon it gets the name of Vappa, and is clean turned to be dead or soure: in K
which regard also we giue a man that name by way of scorne and reproch, calling him Vappa,
when he is heartlesse, void of reason and vnderstanding. If it were vineger indeed it were ano-
ther matter: for surely though wine degenerate into it by way of corruption and putrefaction,
yet a vertue and force it hath good, for many speciall vses, and without which it were not possi-
ble to liue so delicatly at our table as we do. Moreouer, the world is so much giuen to keepe a
bruing, tempering, and medicining of wines, that in some places they sophisticate them with
ashes, as it were with plaister: in other, they fortifie, recouer, and make them againe by such de-
uises as are before specified. But to this purpose they take the ashes to chuse, of vine cuttings,
or of the oke wood, before any other. And forsooth if there be occasion to occupie sea water
for this purpose, they prescribe them to fetch it far from land in the deep sea; & kept also from
mid-March or the Spring Equinox, or at leastwise from mid-Iune, or summer Sunne-stead, and L
drawn in the night, & when the North wind blowes: but if it be got neere the time of vintage,
then it ought to be wel boiled before it wil serue the turn. As for the pitch in Italy, that of Bru-
tium or Calabria is reputed for the best, to trim those vessels which are to keep wine. There is
made of the rosin of the tree Picea (as also in Spain there comes from the wild Pines) a certain
pitch which is the very worst; for the rosin of those trees is bitter, dry, & of a strong sauor. The
difference and sundry kinds of pitch, as also the manner of making the same, we will declare in
the book next following, in the treatise of wild and sauage trees. The faults and imperfections
of pitch, ouer and besides those euen now rehearsed (to wit, bitternes, drynes, & strong sent) are
known by the sourenesse, stinking smoke, and the very adustion thereof. But ye shall know good M
pitch by these experiments, if the pieces broken from it do shine, if between the teeth it resent
and be clammy like glew, and haue a pleasant sharpnes and soure tast withall of the vineger. In
Asia the pitch is thought best which comes of the trees in mount Ida. The Greeks esteem the
trees of the hil Pieria chief for this purpose: and *Virgil* commends that of Narycia before all.

But

A But to returne againe to our brewing and sophistication of wines, they that would seeme to
be cunninger, or at leastwise more curious than their fellowes, do mingle therwith blacke Ma-
sticke, which is engendred in Pontus, and is like to Bitumen; and therto adde the root of Iris or
the floure de luce, and oile. For this is found by experience, That if the vessells be sered with
wax, the wines therin will not hold, but turne soure quickly. Moreouer, we daily see, that better
it is to put vp wine into those vessels, wherin vinegre hath been kept afore, than into such as had
dulcet or honied wine. *Cato* sets downe a receit to trim and concinnate wine (for that is the ve-
ry tearme which he vses) in this manner: Take of lie ashes sodden with cuit boiled to the halfe,
one fortieth part, temper it with a pound and a half of pennirояll, or salt: and otherwhiles with
marble braied & beaten into pouder among. He makes mention also of brimstone, but rosin he
B names with the last. But aboue al he wills to refresh and renue the wine when it now begins to
come to maturity and perfection, with new wine which he calls Tortivum; and I take it, that he
means that which ran last out of the wine-presse: which he prescribeth also to be put vnto new
wines for to get them a fresher color, as the very tincture of wine: and so it wil be also of a more
fattie substance, and goe down more glib and merrily. See, see how many deuises of medicines
and slibber-sauces the poore wine is forced to endure, and all to please our pallat, our eye, and
other sences: and yet yw is we maruell that it is so hurtfull to our bodies. Well, would you haue
an experiment to know when wine is going; or enclining to be dead and soure; dip therein a
thin plate of lead; if it change color, take it for a signe, that it is in the way of decaying. Of all
liquors, wine hath this propertie to vinew, to pal, & into change in vinegre. But a thousand me-
C dicines it doth affoord, and books of Physick are full thereof. Moreouer, wine lees being dried,
will serue as a match to keep fire: and without any other fewell to feed it, ye shall haue it burne
and flame of it selfe. The ashes thereof is of the nature of Nitre, and hath the same vertues: and
in this regard somewhat more, for that it is found to be more fattie and vnctuous.

Chap. XXI.

¶ *Of wine-cellars.*

D Now when wine is made and tunned vp in maner aforesaid, there is as great difference and
diuersitie in the bestowing of it in cellars. They of Piemont about the Alpes, doe put vp
their wines in woodden barrels, bound well with hoopes, for warmth: and moreouer, if the
winter be very cold, they make fires in their cellars or butteries, to keep them for being frozen.
I will tell you a strange wonder, yet true and to be verified, not by heare say but plaine eie sight.
There were seen vpon a time whole heaps & huge lumps of wine congealed into ice, by occasi-
on that the hoopes of the hogsheads burst that contained the wine: and this was held for a pro-
digious token. For indeed wine of it owne nature will not congeale and freeze, only it will lose
the strength, and become apalled in extremitie of cold. In warmer climats and more temperat,
they fil their wines into great stands and steanes of earth, which they set into the ground, either
ouer the head all whole, or else by halfe; deeper or shallower, according to the situation & tem-
perature of the region. Likewise they giue the wine open aire in some places: whereas in other
E they keep it close within house in tauernes and cellars. And thereto belong these and such like
rules. First, that one side of the wine-cellar, or at leastwise the windows, ought to stand open to
the North, or to the East in any wise, where the Sunne riseth at the time of the Æquinoctiall.
Item, that there be no muckhils nor priuies neer: no roots of trees, nor any thing of a strong and
stinking sauor: for that wine is of this nature, to draw any smell very quickly into it: and aboue
all, Fig-trees (as well the wild as the tame) be hurtfull to wine-cellars. *Item*, as touching the or-
der of placing the wine-vessels, they ought to stand a pretty distance one from another: for fear
of contagion, for that wine is alwaies most apt to catch infection very soon. Moreouer, it mat-
ters much of what proportion and fashion the pipes, tubs, and such vessels be made. Those with
great bellies and wide mouths, are not so good. Also they must be nealed with pitch, presently
F vpon the rising of the dog-star: afterwards douse d and washed all ouer either in the sea or else
salt water, then to bee seasoned and strewed with vine ashes or cley, and being scoured, they
ought to sweeten them with a perfume of Myrrhe, which were good to be done also to the very
cellars oftentimes. Furthermore, if the wines be weak and smal, they had need to be kept in tubs
and hogsheads, let downe within the ground: but the strong and mighty wines may lie aboue

ground in the open aire. Prouided alway, that wine vessels be neuer filled top full: but the void G
part that is left, and stands aboue the wine, would be thoroughly dight with thicke wine made
of withered grapes, or sodden wine to the halfe, and saffron mingled withall, yea, and old pitch,
together with cuit. Thus also ought the lids and bungs of the vessels to be ordered, with an ad-
dition besides of mastick and pitch. In the deep of Winter they must not be vnstopped and o-
pened in any case, vnlesse the weather be faire and cleare. Neither when the wind is Southerly,
or the Moon in the full. This also is to be noted, that the floure or mantle which the wine casts
vp to the top, is good when it is white, if it be red, it is a very bad signe, vnlesse the wine it selfe
be of that color. Moreouer, if the vessels be hote, or the lids do sweat, it is no good signe. Note
also, that the wine which soone begins to mantle and cast vp a floure incontinently, or to yeeld
another smell than the own, wil not continue long good. As for the cuits, whether they be sod- H
den to the half or the thirds, they ought to be boiled & made when the skie is without a Moon,
that is to say, in the change, and vpon no day else. Moreouer, the decoction must be in leads, and
not in coppers; with walnuts among to receiue al the smoke, which otherwise might infect the
cuit. In Campaine they let their best wines lie abroad in vessells, euen in the open aire, to take
the Sun, the Moone, raine, and wind, and all weathers that come: and this is thought to bee best
for them.

Chap. XXII.

¶ *Of auoiding Drunkennesse.*

IF a man marke and consider well the course of our life, we are in nothing more busie and cu- I
rious, nor take greater paines, than about wine: as if Nature had not giuen to man the liquor
of water, which of all others is the most wholsom drink, and wherwith all other creatures are
wel contented. But we thinking it not sufficient to take wine our selues, giue it also to our Hor-
ses, Mules, and labouring beasts, and force them against Nature to drink it. Besides, such pains,
so much labor, so great cost and charges we are at, to haue it, such delight and pleasure we take
in it; that many of vs think, they are borne to nothing else, & can skill of no other contentment
in this life: notwithstanding, when all is don, it transports & carries away the right wit & mind
of man, it causes fury and rage, and induces, nay, it casts headlong as many as are giuen thereto,
into a thousand vices and misdemeanors. And yet forsooth, to the end that we might take the
more cups, and poure it downe the throat more lustily, we let it run thorough a strainer, for to a- K
bate and gueld (as it were) the force thereof: yea, and other deuises there be to whet our appe-
tite thereto, and cause vs to quaffe more freely. Nay, to draw on their drinke, men are not afraid
to make poisons, whiles some take hemlocke before they sit downe, becausse they must drinke
perforce then, or els die for it; others, the powder of the * pumish stone, & such like stuff, which
I am abashed to rehearse and teach those that be ignorant of such leaudnesse. And yet wee see
these that be stoutest and most redoubted drinkers, euen those that take themselues most secu-
red of danger, to lie sweating so long in the baines and brothel-houses for to concoct their sur-
fet of wine, that otherwhiles they are carried forth dead for their labour. Ye shall haue some of
them again when they haue been in the hot house, not to stay so long as they may recouer their
beds, no not so much as to put on their shirts: but presently in the place, all naked as they are, L
puffing & laboring still for wind, catch vp great cans and huge tankards of wine (to shew what
lustie and valiant champions they be) set them one after another to their mouth, pour the wine
downe the throat without more adoe, that they might cast it vp againe, and so take more in the
place; vomiting or revomiting twice or thrice together that which they haue drunke, and still
make quarrell to the pot: as if they had been borne into this world for no other end but to spill
and mar good wine: or, as if there were no way els to spend and waste the same, but thorow mans
body. And to this purpose, were taken vp at Rome these forreine exercises, of vaulting and dan-
cing the Morisk; from hence came the tumbling of wrastlers in the dust and mire together; for
this, they shew their broad breasts, beare vp their heads, and carrie their neckes far backe. In all
which gesticulations, what do they else but professe that they seek means to procure thirst and M
take occasion to drink? But come now to their pots that they vse to quaffe and drink out of: are
there not grauen in them faire pourtrais think you of adulteries? as if drunkennesse it selfe were
not sufficient to kindle the heart of lust, to pricke the flesh, and to teach them wantonnes. Thus
is wine drunke out of libidinous cups: and more than that, he that can quaffe best and play the

drun-

* Plin. lib. 36. cap. 22.

A drunkard most, shal haue the greatest reward. But what shal we say to those (would a man think it?) that hire one to eat also as much as he can drink, and vpon that condition couenant to yeeld
him the price for his wine drinking, and not otherwise. Ye shall haue another that will ioine
himselfe to drinke euery denier that he hath won at dice. Now when they are come to that once
and be throughly whitled, then shall yee haue them cast their wanton eies vpon mens wiues;
then fall they to court faire dames and ladies, and openly bewray their folly euen before their
jealous and sterne husbands; then (I say) the secrets of the heart are opened and layed abroad.
Some ye shal haue in the mids of their cups, make their wils, euen at the very board as they sit:
others againe cast out bloudy and deadly speeches at random, and cannot hold but blurt out
those words which afterwards they eat againe with the swords point: for thus many a man by a
lauish tongue in his wine, hath come by his death and had his throat cut. And verily the world
B is now growne to this passe, That whatsoeuer a man saith in his cups, it is held for sooth; as if
Truth were the daughter of Wine. But say they escape these dangers: certes speed they neuer
so well, the best of them all neuer seeth the Sun-rising, so drowsie and sleepy they are in bed e-
uery morning; neither liue they to bee old men, but die in the strength of their youth. Hence
comes it, that some of them looke pale, with a paire of flaggie blabd-cheekes; others haue blea-
red and sore eies: and there be of them that shake so with their hands, that they cannot hold a
full cup, but shed and poure it downe the floore. Generally they all dreame fearfully (which is
the very beginning of their hell in this life) or els haue restlesse nights: & finally, if they chance
to sleep (for a due guerdon and reward of their drunkennesse) they are deluded with imaginary
conceits of *Venus* delights, defiled with filthy and abominable pollutions: and thus both slee-
C ping and waking they sin with pleasure. Well, what becomes of them the morrow after? they
belch soure, their breath stinketh of the barrell, and telleth them what they did ouer night; o-
therwise they forget what either they did or said, they remember no more, than if their memo-
ry were vtterly extinct and dead. And yet our iolly drunkards giue out and say, That they alone
inioy this life, and rob other men of it. But who seeth not, that ordinarily they lose not onely
the yesterday past, but the morrow to come? In the time of *Tiberius Claudius* the Emperor, about
40 years since, certaine out-landish Physitians and Monte-banks, who would seem to set them-
selues out by some strange noueltie of their own, & so get a name, brought vp at Rome a new
deuise and order, to drink fasting, and prescribed folk to take a good hearty draught of wine be-
D fore meat, and to lay that foundation of their dinner. Of all nations, the Parthians would haue
the glory for this goodly vertue of wine-bibbing: and among the Greeks, *Alcibiades* indeed de-
serued the best game for this worthy feat. But here with vs at Rome *Nouellius Torquatus* a Mil-
lanois, wan the name from all Romans & Italians both. This Lombard had gone through all
honourable degrees of dignity in Rome, he had bin Pretor, and attained to the place of a Pro-
consull. In all these offices of state he woon no great name: but for drinking in the presence of
Tiberius, three gallons of wine at one draught and before he tooke his breath again, he was dub-
bed knight by the syrname of *Tricongius*, as one would say, * The three gallon knight: and the
Emperor, steme, seuere, and cruell otherwise though he was, now in his old age (for in his youth-
full daies he was giuen ouermuch to *drinking of wine) would delight to behold this renowned
E and worthy knight, with great wonder and admiration. For the like rare gift and commendable
qualitie, men think verily that *C. Piso* first rise, and afterwards was aduanced to the Prouostship
of the city of Rome, by the said *Tiberius*, & namely, for that in his court being now emperor, he
sat 2 daies and 2 nights drinking continually, and neuer stirred foot from the boord. And veri-
ly *Drusus Cæsar* (by report) in nothing more resembled his father *Tiberius*, than in taking his
drink. But to return again to noble *Torquatus*, herein consisted his excellency, That he did it ac-
cording to art (for this you must take withall, there is an art of Drinking, grounded vpon certain
rules and precepts.) *Torquatus* (I say) drank he neuer so much, was not known at any time to fal-
ter in his tongue, neuer eased himself by vomiting, neuer let it goe the other way vnder boord;
how late soeuer he sat vp at the wine ouer night, he would be sure to relieue the morning watch
F & sentinel. He drunk most of any man at one entire draught before the pot went from his head:
and for smaller draughts besides, he went before all other in number; his winde he neuer tooke
while the cup was at his mouth, but iustly obserued the rule of drinking with one breath; he was
not known to spit for all this: & to conclude, he would not leaue in the cup, so much as would
dash against the pauement, & make the least sound to bee hard: a special point and precise law

to

* not the thri gallant knigh Whereupo he was called *Bibberius Mer* for *Tiberius Nero*.

to preuent the deceit of thoſe that drinke for a wager. A ſingular glory no doubt in him, and a G
rare felicity. *Tergilla* challenged *M. Cicero* the younger, ſon to that *M. Cicero* the famous Orator,
and reproched him to his face, that ordinarily he drunk 2 gallons at once: and that one time a-
boue the reſt when he was drunke, he flung a pot at *M. Agrippa* his head. And truly this is one of
the fruits and feats of drunkenneſſe. But blame not young *Cicero*, if in this point yet he deſired
to ſurmount him that ſlew his father, *M. Antonius* I mean; for he before that time ſtrained him-
ſelfe, and ſtroue to win the beſt game in this feat, making profeſſion thereof, as may appeare by
a booke that he compiled and ſet forth with this title, *Of his owne drunkenneſſe*: wherein hee was
not aſhamed to avow and juſtifie his exceſſe and enormities that way: and thereby approoued
(as I take it) vnder pretence and colour of his drunkenneſſe, all thoſe outrages of his, all thoſe
miſeries and calamities that he brought vpon the whole world. This treatiſe he vomited and H
ſpued out a little before the battell of Actium, wherein he was defeated: whereby it may ap-
peare very plainly, that as he was drunken before with the bloud of citizens, ſo ſtill hee was the
more bloud-thirſty. For this is a property that neceſſarily followeth this vice, That the more a
man drinketh, the more he may, and is alwaies dry. And herein ſpake to good purpoſe a certain
Embaſſadour of the Scythians, ſaying, That the Parthians the more they drunke, the thirſtier
they were.

As touching the nations in the Weſt part of the world, they haue their drinks alſo by them-
ſelues made of * corn ſteeped in water, whereof they will drinke to the vtterance, and be drunk:
and namely in Spaine and France, where the manner of making the ſame is all one, how ſoeuer I
they haue* diuers names: and in Spain they haue deuiſed means that theſe drinks (Ale or Beer)
wil abide age, & continue ſtale. In Egipt likewiſe they haue inuented ſuch kind of drinks made
of corn: ſo that no part or corner of the world there is, but drunkenneſſe reigneth. And verily
theſe liquors how ſoeuer they be named, they vſe to drinke entire as they bee, and made of the
very ſtrength of Malt: neuer delaying the ſame with water, as we do wines. But it may be ſayd,
That Nature hath endowed & inriched thoſe countries with abundance of corn, and therefore
they may wel do it. Oh how induſtrious we are to maintain our vices! There is a deuiſe found,
(would euer any man haue thought it?) how water alſo ſhould make men drunke. Two liquors
there be, moſt pleaſing and acceptable to mens bodies, wine within, & oile without. Both pro-
ceed from two ſpeciall trees, howbeit, of the twaine, Oile is neceſſary, and Wine may be better K
ſpared. And verily, men haue not bin idle in the making of good oile: howbeit, they haue beene
more addicted and giuen to make Wines for drink; as may appeare by this, that reckoning but
the generall kinds thereof, a man may find 195 ſorts of wine: but if a man would ſubdiuide and
diſtribute thoſe heads into their branches, he ſhould meet almoſt with twice as many: but of
Oyles there bee not ſo many kindes by farre. Whereof we purpoſe to treat in the booke next
following.

THE

A

THE FIFTEENTH BOOK OF THE HISTORIE OF NATVRE,

B WRITTEN BY C. PLINIVS SECVNDVS.

Chap. I.

¶ *The natures of trees that beare Fruit.*

C THere were no oliue trees grew in Italy, but vpon the coaſt ſide, and that within 40
miles of the ſea, about the 440 yere after the foundation of the city of Rome;
if it be true that *Theophraſtus* ſaith, who was one of the moſt famous and renow-
ned Authors among the Greeks. *Feneſtella* writeth moreouer, and affirmeth, that
during the raigne of *Tarquinius Priſcus* (which was much about the 183 yeare
from the foundation of the city of Rome) there were no Oliue trees at all to
be found, either in Italy, Spaine, or Africke: whereas now at this day they are ſeene all Italy o-
uer, yea and be come as far as the regions beyond the Alps, euen into the mids and very heart of
France and Spaine. Indeed, in the yeare after the foundation of Rome 505 (which was when *Ap-
pius Claudius*, the nephew of that great *Appius Claudius* ſyrnamed the Blind, and *L. Iunius* were
Conſuls together) a pound of the oile was ſold for twelue Aſſes: and not long after (namely,
in the 680 yeare) *M. Seins* the ſon of *Lucius* (one of the Ædiles Curule for the time beeing)
brought downe the market ſo well, that a man might haue bought ten pound for one As; and
D at that price he ſerued the people of Rome throughout all that yeare. Leſſe cauſe therefore a
man hath to maruell hereat, who knoweth how not paſt 22 yeares after that (namely when *Cn.
Pompeius* was the fourth time Conſull) Italy was able to furniſh other nations and prouinces
with oile of Oliues. *Heſiodus* alſo (who was eſpecially addicted to the ſtudy of huſbandry, and
of all things thought it moſt neceſſaric to be taught and publiſhed for the good of mankinde)
wrote thus much concerning the Oliue, That neuer a man was knowne to that day for to haue
gathered the fruit of that Oliue tree, which himſelfe had planted: ſo late of growth were thoſe
trees in his time, and ſo ſlowly came they forward. But now adaies they come vp of kernels and
ſtones ſet in plots of ground for the purpoſe: and being tranſplanted againe, they beare Oliues
the ſecond yeare after. *Fabianus* ſaith, That Oliues loue not to grow either in the coldeſt or the
E hotteſt grounds.

Virgill hath ſet downe 3 kind of Oliues, to wit, Orchitæ [*i.* the great round Oliues:] Radij, [*i.*
the long Oliues:) and thoſe which are called Pauſiæ. He ſaith moreouer, That the Oliue trees
require no tending or dreſſing at all, and need neither the hooke to be pruned, nor the rake and
harrow to be moulded, ne yet the ſpade to be digged about. Doubtleſſe, the goodneſſe of the
ſoile, and the temperature of the climat eſpecially, are very requiſit and much materiall alone,
without farther helpe: howbeit they vſe to be cut and pruned, yea, they loue alſo to be ſcraped,
poliſhed, and cleanſed between where the branches grow ouer-thicke, euen as well as vines, and
at the ſame ſeaſon.

The time of gathering Oliues enſueth preſently vpon the vintage of grapes; but greater in-
F duſtry and skil is required to the making and tempering of good oile, than about new wine: for
ye ſhall haue one and the ſelfe ſame kind of oliue to yeeld a different juice, and diuers oiles: firſt
and formoſt, of the greene oliue and altogether vnripe, there is drawne the Oile-oliue; which
hath of all other the beſt verdure, and in taſt excelleth the reſt: and of this oile, the firſt running
that commeth from the preſſe, is moſt commended: and ſo by degrees better or worſe, as the
oile

oile is drawn before or after, out of the presse: or, according to a late inuention, by treading them with mens feet in little panniers, and vpon hardles made of small and fine oziers. This is a rule, The riper that the oliue is, the fatter will the oile be, and more plentifull; but nothing so pleasant in taft. And therefore the best season to gather Oliues, both for goodnesse and abundance of oile, is when they begin to shew black. And such halfe-ripe Oliues we in Latine call Drupæ, and the Greekes Drypetæ. To conclude, it skilleth very much whether the berries be ripe vpon the tree, or mellow within their presse: also whether the tree be watered, that is to say, the oliues hanging thereupon be drenched and refreshed with sprinkling water, or haue no other moisture than their owne, and that which they receiue by dews and raine from heauen.

Chap. II.

¶ *Of oyle.*

OIle-Oliue commeth to haue a rank and vnpleasant taft if it be old kept and stale, contrary to the nature of wine, which is the better for age. And the longeft time that oile will continue good, is but one yere. Wherein surely if a man would well consider, he may obserue the great prouidence of Nature. For seeing that wines are made to seruefor intemperance and drunkennesse, there is not that necessitie to drinke much thereof, and to spend them out of hand: and more than so, the daintie taft that they haue when they be stale, inducetth men to lay them vp and keep them long. But contrariwise, she would not haue vs make such spare of oile: and therefore by reason of the generall vse and need thereof, she hath made it vulgar and common to all.

As touching this benefit and gift of Nature bestowed vpon mankind, Italy of all other nations in the world carrieth the name for the goodnesse thereof: but principally the territory or county of Venafrum, and namely, that quarter lying toward Licinia, which yeelds the oile called Licinianum: wherupon there be no oliues comparable to them of Licinia, both for to serue the perfumers, in regard of the pleasant smel which that oile doth giue, so appropriat vnto their ointments: as also to furnish the kitchin and the table (as they say that be fine-toothed, & haue a delicate taste:) which is the cause (I say) that this oile carrieth the only name. And yet these oliues of Licinia haue this priuiledge besides, that birds loue not to come neere them. Next to these Licinian oliues, the question is between them of Istria & Bætica, whether of them should go away with the price for their goodnesse: and hard it is to say, which is the better of the two. A third degree there is vnder these twoaboue named, namely, of the Oliues that come from all other prouinces, setting aside the fertile soile of that tract in Africke, which yeeldeth so great increase of corn. For it should seeme that Nature hath set it apart for graine onely, seeing it so fruitfull that way: and hath not so much enuied it the benefit of wine and oile, which she hath denied those parts, as thought it sufficient that they might glory, and haue the name for their harueSts. As for other points belonging to oliues, men haue erred and bin deceiued very much: neither is there in any part concerning our life, to be found more confusion, than is therein: as we will shew and declare hereafter,

Chap. III.

¶ *The nature of the Oliue berries: also of yong Oliue Plants.*

THis fruit called the Oliue, consists of a stone or kernell, of oile, a fleshy substance, and the lees or dregs: now by these lees (called in Latine Amurca) I mean the bitter liquor of the grounds that the oile yeelds. It comes of abundance of water: and therefore as in time of drought there is least thereof, so in a rainy and watery constitution, you shall haue store and plenty. As for the proper juice of the oliue, it is their oile; and the chiefe is that which comes of those that are vnripe, like as we haue shewed before, when we treated of Omphacium, or the Oliue verjuice. This oilie substance doth increase and augment within the Oliue vntill the rising of the star Arcturus, to wit, 16 daies before the Calends of October; after which time, their stones and carnous matter about them do rather thriue. But marke, when there followes a glut of raine and wet weather presently vpon a dry season, the oile in them doth corrupt and turn all (well neare) into the lees aboue said, which may easily be perceiued by the colour: for it causeth

seth the Oliue berrie to looke blacke. And therefore when this blacknesse begins to appeare, it is a sign that they haue somwhat (although very little) of the lees; but before that, they had non at all. And herein men are foulely deceiued taking this marke for the beginning of their ripenesse: which blacke hew indeed is a signe of their corruption, and betokens that then they are in the way tobe stark naught. They erre also in this, that they suppose an Oliue the more grown it is in carnositie, to be the fuller of oile: whereas in very truth, all the good juice in them is conuerted then into the grosse and corpulent substance thereof, and thereby also the stone and kernell come to be big and massie: which is the cause, that they had need of watering at that time, most of all. Which being done by great paine and labour of man, or happening through raine and plenty of showers; vnlesse there insue a drie season & faire weather to extenuate that grosse substance into which the Oliue had turned the foresaid juice and humor, all the oile is consumed and lost. For it is heat & nothing els (as *Theophrastus* saith) which ingendreth oile: & therfore both about the presse at first, & also in the very garners where Oliues be laid after, they vse to keep good fires, by that means to draw the more oile forth. A third default there is in oile, and that comes of two much sparing and niggardise: for some men there are, who being loth to be at cost to pluck and gather Oliues from the tree, wait still and looke that they should fal of themselues. And such folke as would seeme yet to keepe a meane herein, namely, to take some paines and be at a little cost; beat and pell them downe with perches and poles: whereby they do offer wrong to the poore trees, yea, and hinder themselues not a little the yeare following, when they shall find how much it is out of their way, thus to break their boughes and branches.

Whereupon the law in old time prouided well for this inconuenience, by an expresse inhibition to all gatherers of Oliues, in these words, *No man so hardie as to breake, strike, and beat the Oliue tree.* But they that go most warily and gently to worke, stand vnder the tree, and with some canes shake the boughes and branches therewith, or lightly smite them: but in no case let driue and lay at them either with full down-right or crosse-blowes. And yet as heedfull as they be in so doing, this good they get by striking and knapping off the young shootes and sprigs which should beare the next yeare, that they haue the trees carry fruit but once in two yeares for it. The like hapneth also, if a man stay till they fall of themselues: for by sticking on the tree beyond their due time, they rob the oliues to come after, of all their nutriment wherewith they should be fed, and detaine the place likewise where they should come forth and grow. An euident proofe hereof is this, That oliues vnlesse they be gathered before the ordinary & yearely western winds do blow, they gather heart again vpon the tree, & wil not so easily fall as before. Men vse therefore to gather the Pausian Oliues first after Autumne, which are fullest of carnosity, not so much by nature, as by misgouernement and disorder: soone after, the round Orchitæ, which haue plenty of oile, & then the oliues Radij: and these, forasmuch as they be most tender, and sooneSt ouercome with abundance of the lees (which we called before Amurca) are therby forced to fal. Howbeit, such oliues as be thick skinned and hard; tough also and admitting no wet & rain (by which means they are the leaSt of all others) wil abide on the tree til March: and namely, the Licinian Oliues, the Cominian, Contian, & Sergian, which the Sabins cal roial: all which change not colour & look black before the foresaid Western wind blowes, that is, about the 6 day before the Ides of February; for by that time folk think they begin to ripen. Now for as much as the best & most approued oile is made of them, it seems that reason also being conformable to this defect of theirs, justifies, & aproues the same in the end. And this is commonly receiued and held among them, that cold winters breed scarcity and dearth: but ful maturity brings plenty, namely when they haue leisure to ripen on the tree: howbeit this goodnes is not occasioned by the time, but by the nature rather of those kind of oliues, which be long ere they turn into the foresaid dregs Amurca. Men are also as much deceiued in this, that when Oliues be gathered, they keep them vpon borded floors in sellars and garners, & will not presse them before they haue swet: whereas, in truth, the longer they lie, the lesse oile they yeeld, & the more dregs of lees. For by this means the ordinary proportion they say is, to presse out of euery Modius of Oliues, not aboue 6 pound of oile. But no man makes any reckoning of the lees, how much it increases in measure day by day, in one & the very same kind of Oliues, the longer that they be kept ere they be pressed. In one word, it is a common error setled euery where, that men do think the abundance of oile, is to be esteemed according to the bignes of the oliues: considering that the plenty of oile consists not in the greatnes of the fruit: as may appeare by those that

of

of some are called Roiall, of others Majorinæ, and Phauliæ, which euery man knoweth, are the biggest and faireſt Oliues to ſee to, & yet otherwiſe haue leaſt oile in them of any others. Likewiſe in Ægypt the oliues are moſt fleſhie & ful of pulp, howbeit, leaſt oleous. As for the country Decapolis of Syria, the oliues indeed be very ſmal there, & no bigger than Capers: yet commended they are for their carnoſity. And for that cauſe, the oliues from the parts beyond ſea are preferred before the Italian, for goodneſſe of meat, and as better to be eaten; yet thoſe of Italy yeeld more oile. And euen within Italy, the Picene and Sidicine oliues ſurpaſſe the reſt. For in truth, theſe are firſt confected and ſeaſoned with ſalt: or els (as all others) prepared & condite either with lees of oile, or wine cuit. Some oliues there be, which they ſuffer to ſwim alone as they be, in their owne oile, without any help and addition of other things; and ſuch be called Colymbades. And the ſame they vſe otherwhiles to bruiſe and cleanſe from their ſtones, and then confect them with green herbs, which haue ſome pleaſant & commendable taſte. Others there are, which being otherwiſe very green and vnripe, are preſently brought to maturity, and made mellow, by lying infuſed and ſoking in hot ſcalding water. And a wonder it is to ſee, how Oliues wil drink in a ſweet liquor, and how by that means they may be made toothſome, yea, and to carry the taſt of any thing that a man would haue them. Among oliues there be alſo that are of colour purple, like to thoſe grapes which change colour when they begin to ripen. Moreouer, beſides the aboue named ſorts of olives, there be ſome named Superbæ [i. proud.] Alſo there are Oliues to be found, which being dried by themſelues onely, are paſſing ſweet, yea, and more delicate than raiſins: mary theſe are very geaſon, and yet ſuch are in Africke and about the city Emerita in Portugall.

As touching the very oile it ſelf, the way to preſerue it from being ouerfat and thick, is with ſalt. If the barke of an Oliue tree be ſlit and cut, it will receiue the rellice and ſmell of any medicinable ſpice, and the oile thereof wil ſeem aromatized: otherwiſe pleaſant in taſt it is not, like as wine is: neither is there ſuch difference in ſo many kinds of oliues as there is in wine: for ſurely we cannot at the moſt obſerue aboue three degrees in the goodneſſe of oiles, namely, according to the firſt, ſecond, and third running out of the preſſe. Finally, the thinner that oile is, and the more ſubtill, the finer and daintier is the ſmell thereof: and yet the ſame ſame ſent, in the very beſt of them all, continueth but a ſmall time.

Chap. IIII.

¶ *The nature of Oile Oliue.*

THe property of oile is to warm the body, and to defend it againſt the iniuries of cold: and yet a ſoueraigne thing it is to coole and mitigate the hot diſtemperature of the head. The Greekes, whom wee may count the very fathers and foſters of all vices, haue peruerted the true and right vſe thereof, to ſerue for all exceſſe and ſuperfluitie; euen as far as to the common annointing of their wraſtlers with it, in their publick place of exerciſe. Known it is for certain, that the gouernors and wardens of thoſe places, haue ſold the oile that hath beene ſcraped from the bodies of the ſaid wraſtlers for 80 Seſterces at a time.

But the ſtately maieſty of Rome contrariwiſe hath done ſo great honour to the Oliue tree, that euery yere in Iuly, when the Ides come, they were wont to crowne their men of armes and gentlemen marching by their troups and ſquadrons in ſolemne wiſe, with chaplets of oliue, yea and the manner was of captains likewiſe to enter ouant in pety triumphes into Rome, adorned with Oliue coronets. The Athenians alſo honoured their conquerors with Oliue garlands. But generally the Greekes did ſet out their victors at the games of Olympia, with branches of the wild-oliue.

Chap. V.

¶ *The manner how to order Oliues.*

NOw will I report the precepts and rules ſet down by *Cato*, as touching oliues. His opinion is, that the greater long Oliue Radius of Salentum, the big Orchites, the Pauſia, the Sergiana, Cominiana, and the Albicera, ſhould be planted in hot and fat grounds. He addes moreouer (as hee was a man of ſingular dexterity and prudent ſpirit) which of them in the neigh-

A neighbour territories and places adioining, were taken for the beſt. As for the Licinian Oliues, he ſaith, They would be planted in a weely and cold hungry ground: for if it be a fat ſoile and a hot, the oile wil be corrupt and naught, and the very tree it ſelf wil in ſhort time be killed with ouermuch fertility and bearing too great a burden. Moreouer, they will put forth a red kind of moſſe, which eateth and conſumeth the tree. To conclude, his mind is, that Oliue hort-yards ſhould be expoſed to the ſun, yet ſo, as they regard the Weſt wind alſo in any caſe, for otherwiſe he commendeth them not.

Chap. VI.

¶ *How to keep Oliues, and the way to make oile of them.*

B *Cato* alloweth of no other means to keep and preſerue oliues (and ſpecially the great ones made like cullions, named thereupon Orchita, and the Pauſiæ) but either in brine and pickle when they are greene, or elſe among Lentiſk branches when they are bruiſed and broken. The beſt oile is made (ſaith he) of the greeneſt and foureſt oliues. Moreouer, ſo ſoon as euer they be faln, they muſt be gathered from off the ground; and if they be fouled and beraied with the earth, they ought to be waſhed clean, and then laid to dry three daies at the moſt. Now if it fall out to be weather diſpoſed vnto froſt, they ſhould be preſſed at 4 daies end. He giueth order alſo, to beſtrew and ſprinkle them with ſalt: ſaying moreouer, that if they be kept in borded ſollors or garners, the oile will be both leſſe in quantitie, & worſe withal. So it wil be alſo, if it be let lie long in the lees, or together with the cake and grounds, when they be bruiſed and
C beaten: for this is the very fleſhie and groſſe ſubſtance of the Oliues, which cannot chuſe but breed filthy dregs. And therfore he ordaineth, that oftentimes in a day it ſhould be poured out of one veſſell into another, & ſo by ſetling clarified from the grounds, & then to put it vp afterwards into pans and panchions of earth, or els into veſſels or kimnels of lead, for braſſe mettall wil mar oile. All this ſhould be done within cloſe preſſes and rooms, and thoſe kept ſhut, where no aire or wind may come in, that they might be as warm and hot as ſtouves. He forbids alſo to cut any wood or fuel there, to maintain fire; for that the fire made of their ſtones and kernels, is moſt kindly of any other. To the end alſo that the grounds & lees ſhould be liquified and turn into oile, euen to the very laſt drop, the oile ſhould be let run out of thoſe veſſels or kimnels a-
D foreſaid into a vat or ciſtern; for which purpoſe the veſſels are often to be clenſed, & the ozier paniers to be ſcoured with a ſponge, that the oile might ſtand moſt pure & clear. But afterward came vp the deuiſe to waſh oliues firſt in hot water, & then immediatly to put them whole as they are, into the preſſe, for by that means they ſquize forth lees & all: and then anon to bruiſe and cruſh them in a mil, & ſo preſſe them in the end. Moreouer, it is not thought good to preſſe the ſecond time aboue 100 Modij, which is the full proportion of one preſſure, & it is called Factus. That which after the mil comes firſt, is named the floure of the oile, or the Mere-gout. Laſtly, to preſſe 300 Modij, is thought to be foure mens work ordinarily in one night and a day.

Chap. VII.

E ¶ *Of Oile Artificiall*

IN *Cato* his time there was no artificiall Oiles, I meane, no other but that of the Oliue; and therefore I ſuppoſe it was, that he made no mention thereof: but now adaies there be many kinds. Firſt will we treat of thoſe that are made of trees, and principally before all the reſt, of the oile of the wild oliue: thin it is, and much more bitter than that of the other gentle & true Oliue, but good for medicines onely.

Very like to it, is that which is made of Chamelæa, an herb or ſhrub growing in ſtony places to the heigth of a ſpan & no more, with leaues and berries reſembling thoſe of the wild oliue.

The next is that which commeth of Cici, or Ricinus, [i. Palma Chriſti] a plant which growF eth plentifully in Ægypt, which ſome call Croto, others Trixis or wild Seſam; but long it hath not been there. In Spaine likewiſe this Ricinus is found of late to riſe ſuddenly to the heigth of an Oliue tree, bearing the ſtalke of Ferula or Fennel-Geant, clad with leaues of the vine, and repleniſhed with ſeed reſembling the graines or kernels of ſmall and ſlender grapes, and of a pale colour withall: ye in Latine call it Ricinus, of the reſemblance that the ſeed hath to a ticke,

which is a vermin that annoies sheepe. For to gather an oile thereof, the manner is to seeth the seeds in water; the oile wil swim aloft, and so it is scummed off. But in Egypt (where there is abundance thereof) they neuer vse any fire or water about it; only they corn it well with salt, and then presse out the oile, which is very fulsome and naught to be eaten, good only for lamps. G

The oile of Almonds, which some cal Metopium, is made of the bitter Almonds, dri'd stamped, and reduced into a masse or lumpe, which being sprinkled and soked with water, and then beaten againe in a mortar, is put into a presse or mill, and the oile drawne therout.

There is an oile made also of the Bay, together with the oile of ripe oliues ready to drop from the tree. Some take the Bay berries only, and thereout presse oile de-Baies: others vse the leaues and nothing els: and there be againe, who with the leaues take also the rind of the Bay berries; yea and put thereto Storax Calamita, and other sweet odors. Now for this purpose, the Laurell with broad leaues, growing wild, and bearing blacke berries, is the best. H

Like vnto this oile, is that which they make of the blacke Myrtle; and the broad leafed kind thereof is the better: the berries of it ought to lie infused first in hot water, and afterwards to be boiled. Some seeth the tenderest leaues that it hath in Oile-Oliue, and then presse them forth. Others put the leaues first in the oile, & then let them stand confected in the sun, and there take their ripening.

After the same manner is the oile made of the garden Myrtle; but that of the wilde which hath the smaller seed is the better: and this Myrtle some call Oxymyrsine, others Chamæmyrsine; and some againe name it for the smalnesse, * Acaron, for short it is and full of little branches. I

* Indiuisible, or so small that it cannot be cut.

Moreouer, there be oiles made of the Citron and Cypresse trees: likewise of wall nuts which they call Caryinon: also the fruit of the Cedar, named Cedrelæon.

Semblably of the graine called Gnidium, to wit, the seed of Chamelæa and Thymelæa, well clensed and stamped. In like manner of the Lentisk. As for the oile Cyprinum, how it should be made of the Egyptian nut and of Ben for to serue perfumers, hath bin shewed before. The Indians (by report) do make of Chest-nuts, of Sesame seed, & Rice. The people Ichthyophagi as they liue by eating fish only, so they make oile of fishes. And in case of necessity, otherwhiles men vse to draw an oile out of the berries of a Plane tree also, beeing steeped in water and salt, which serues for lamp oile. Yea and there is an oile made of the wild vine Oenanthe, as we haue said already in the treatise of Ointments. K

As touching the oile which the Greeks call Gleucinum, it is made with new wine and oile-oliue, boiled at a soft fire. Others there be that let the wine consume all into oile, and without any fire at all, do compasse the vessell wherein this composition is made, with the cake and the refuse of grapes when they be pressed, and couer it all ouer for the space of 22 daies, so as twice a day they be all mixed throughly together. Some there be who put therto not only Majoram, but also the most precious and exquisite odors that they can meet withal: and our common fencing-halls, and places of publick exercises be perfumed with these sweet oiles, and do smell of them; but such they be as are the cheapest of all other.

Ouer and besides, there is made an oile of Aspalathus, sweet Calamus, Balme, Iris or Flour-de-lis, Cardumome or grains of Paradise, Melilot, French Nard, Panace, Marjoram, Elecampane, and the root of Cinamon, taking all these and letting them lie infused in oile, and so pressing out the iuice thereof. So is oile Rosat made of Roses: the oile of Squinanth of the sweet rush, which is most like to the Oile Rosat. Likewise of Henbane, Lupines, and the Daffadil: the Egyptians get great store of oile out of Raddish seed, or the grasse called Gramen (which is Dent-de-chien or Quich-grasse) and this oile they call Chortinon. After the same manner the Sesame-seed doth yeeld an oile; as also the Nettle, which in Greeke they call Cnecinon, or rather Cnidinum. As for the oile of Lillies, it is made in some places, where they feare not to let it stand abroad in the aire infused to take both Sun and Moon-shine, yea and frosty weather. L

They that inhabit between Cappadocia and Galatia, do compound a certain oile of herbes growing among them, which is a soueraigne remedy for sinewes either wounded or otherwise grieued, and they callit Selgiticum: it is much in effect like to that oile which is made in Italie of Gums, by the people Eguini. M

Now for the oile of Pitch, which they call Picinum, it is made of the vapors and smoke that arise from Pitch whiles it boileth, and receiued in fleeces of wooll spread ouer the pots mouth wherein

A wherein the said Pitch is sodden: which fleeces afterwards are well wrung, and the oile is pressed out thereof. The best oile is that which commeth from the Brutian or Calabrian pitch: the same is most fat of all others, and fullest of Rosin. The colour of the oile is reddish.

Vpon the coasts and maritime parts of Syria, there is an oile engendereth of it selfe, which the Greeks call Elæomeli: a fatty and greasie substance it is, thicker than honey, and thinner than Rosin, of a sweet taste, issuing out of trees; and is onely medicinable and good in Physicke.

As touching old oile, it serues in right good stead for sundry sorts of maladies. It is thought also very singular for to preserue Iuory from putrefaction, for this is certaine, that the image of *Saturne* at Rome is full of oile-oliue all within.

B

Chap. VIII.

¶ *Of the lees or dregs of Oile-oliue, called Amurca.*

Cato hath highly commended aboue all, the lees of Oile-oliue: for he would haue the barrels, hogsheads, and other vessels which hold oile, to be therewith besmeared, that they should not drink vp the oile. He deuised also, that the threshing floors should be wrought and tempered with oile lees, that they might not chawn & gape, nor no Ants breed within the chinks and cranies thereof. Moreouer, he thinks it very good that the mortar, plaister, and parget vsed about the wals of corn barns, as also their floors, should be well sprinkled and tempred with the said lees; yea, and the presses and wardrobes where apparell is kept, ought to be rubbed therewith to keep out mothes, worms, spiders, and such vermine that do hurt to cloths. He affirmeth besides, that is good against certain diseases of four-footed beasts, as also to preserue trees, yea and excellent for inward vlcers of a mans body, but especially those of the mouth. Being sodden, it is singular good (as he faith) for to annoint and make gentle and supple all bridle reins, leather thongs, shooes, and axletrees of carts and wagons; likewise to keepe all vessels of brasse from rust, and also to giue them a bright and pleasant colour: moreouer, all the woodden implements of an house generally throughout, and vessels made of earth and clay, wherein one would keep dry figs in their verdure, would be annointed therewith: or if one were desirous to preserue the Myrtle, leaues, fruit, and all, vpon the branches, or any such thing, there is nothing better than the said Amurca. Last of all, he saith, that what wood soeuer for fewell is dipped in these lees, it will burne cleare without any smoke. C D

M. Varro affirmeth, that if a Goat chance to licke with his tongue, or to brouse an oliue when it budded the first spring, the same tree will surely be barren and lie in great danger to miscary and die. Thus much of the Oliue tree, and of the oile of Oliues.

Chap. IX.

¶ *All kinds of Fruit good to eat, and their Nature.*

AS for all other fruits of trees, they are hardly to be numbred and reckoned by their forme and figure; much lesse by their sundry tasts and diuers iuices that they yeeld, so intermingled they are together by varietie of grafting one into another. E

Chap. X.

¶ *Of Pine-nuts, or Pine-apples, foure sorts.*

THe Pine nuts (which are the biggest of that kind and hanging highest vpon the tree) doe contain and nourish slender kernels enclosed within certaine hollow beds ful of holes, and besides clothed and clad with another coat or husk of a dark murrey colour: wherein may be seen the wonderfull care and prouidence of Nature, to bestow the seedes so soft. A second kinde there be of these Nuts called Terentines, hauing a shell or huske verie brittle and easie to be crushed between ones fingers; and as soon are they pecked through with birds bils, who after that manner filch and steale them from off the tree. A third sort yet there is of them, that come of the gentle pitch trees, hauing their kernels couched within a thin husk or skin more like than a shell, and the same so soft, that it may be chewed and eaten together with the kernell. Now there is a fourth fruit growing of the wild Pine, and called those nuts are of the Grecians, Pityo- F

dia; and these be singular good against the cough. The Taurines in Calabria, haue a deuice to confect Pine-nut kernels, by seething them in hony; and being thus condite, they call them Aquiceli. To conclude, at the solemne and festiuall games holden at Isthmus, they who win the best prize, are woont to be crowned with a chaplet of the Pine.

Chap. XI.

¶ *Of the Quince.*

NExt to Pine apples, for big and large, are the Quinces which we call Cotonea, the Greeks Cydonea, because they were first brought out of Candy. So heauy and massie they be, that they bend the boughs to the ground as they hang vpon the tree, and will not suffer their mother to grow.

Many kinds there be of Quinces, to wit, Chrysomela, of a colour inclining to gold, and diuided by certain cut lines. Secondly, there be the quinces of our own country, & so called: these be whiter, and of an excellent smell. They also that come out of the realm of Naples, be highly esteemed. Now there be a smaller sort of the same kind called Struthea (*i.* the Peare-quince) and those do cast a more odoriferous smell: late they be ere they come to ripenesse or perfection; whereas contrariwise the green quinces called Mustea, be as hasty and soon melow. Now if a man do graffe the great quinces vpon the Struthea, the tree wil bring forth a kind of quinces by themselues called Muluiana; and these are the quinces alone of all other that may be eaten raw. In sum, all the sort of these are come now adaies to be entertained within the waiting or presence chambers of our great personages, where men giue attendance to salute them as they come forth euery morning; and in bed-chambers also they are to garnish the images standing about the beds-head and sides.

There are besides small wild quinces, next to the Peare quince Struthea, for pleasant and odoriferous smell; and they grow commonly in hedge-rowes.

Moreouer, as wel Peaches as Pomegranats, notwithstanding they be of a diuers kind, yet wee call Mala (*i.* apples.) As for the Pomegranats, we haue spoken of nine sorts of them in our treatise of their trees, and others in Africk: and these are full of certaine graines or kernels lying inclosed vnder their rinde; whereas Peaches haue in stead thereof, a grosse stone or wooddy substance within the carnous pulpe of the fruit. To conclude, there be certaine peares weighing a pound, in regard of which poise and bignesse that they beare, called they are Libralia.

Chap. XII.

¶ *Of the Peach, and foure kinds thereof.*

OF all Peaches, the principall be those which are named Duracina, for the solid substance of the meat within them. As for the French and Asiaticke Peaches, they beare the name of the regions and nations from whence they come. This fruit ordinarily waxeth ripe after the fall of the leafe, or Autumne: but the Abricocts are ready to be eaten in Summer. These haue not bin known full 30 yeares, and at their first comming vp, were sold for Roman deniers a peece, whereof there be two sorts; Supernatia, which we haue from the high countries, & namely the Sabines; and Popularia, which grow common euery where. These fruits be harmlesse, and much desired of sicke folke: and for that they are in such request, there would be giuen otherwhiles 30 Sesterces for one of them; which is a price as high as of any other fruit whatsoeuer: whereat we may maruell the rather, for that there is not any sooner gone, and lasteth lesse while than they: for being once gathered from the tree, they will not be kept aboue two daies at the most, and therefore must of necessitie be sold and spent out of hand.

Chap. XIII.

¶ *Of the Plum-tree, eleuen kinds of them.*

TO come now to Plums, there is a world of them: some of sundry colours, others black, and some againe white. There be that are called Hordearia, because they be ripe in barly-harueast: and some there be of the same colour, yet later ere they ripen, and bigger besides; and

and for that they be of small reckoning, named they are Asinina [*i.* *Asse-plums.] Ye shal haue of them that be black, howbeit the yellow wheat-plum like virgin-wax, and the purple, are better esteemed. Moreouer, there are a kind of Abricots come from a forraine nation, and they be called thereupon Armeniaca, which alone for their smell also are commendable. But there is a peculiar braueric and a shameleſſe, which those Plums haue by themselues that are graffed in Nut-tree stocks; they retain the face and forme still of the mother graffe, but they get the taste of the stock wherein they are set, as it were by way of adoption: of them both they carry the name, and are called nut-plums. Now, as wel these, as Peaches, yellow wheat-plums, & the wild Bullaise, may be kept and preserued as grapes in Autumn, within certain barrels or earthen vessels, and so they will continue good till new come. As for all other plums, as they be soon ripe, so they are as soone gone.

*Asour hors plums.

It is not long since, that in the realm of Granado and Andalusia, they began to graffe plums vpon apple-tree stocks, and those brought forth plums named Apple-plums: as also others called Almond-plums, graffed vpon Almond-stocks; these haue within their stone a kernel like an Almond: and verily there is not a fruit again wherein is seene a wittier deuise to conioine and represent in one and the same subiect, two diuers sorts.

As for the Damascene-plums (taking name of Damasco in Syria) we haue sufficiently spoken thereof in our treatise of strange trees: and yet long since they haue bin knowne to grow in Italy: which although they haue a large stone and little carnosity about them, yet they neuer wither into wrinkles and riuels when they be dry, for that they want the ful strength of the kind Sun which they had in Syria.

We should do wel to write together with them, of the fruit Sebesten, which also come from the same Syria, albeit now of late they begin to grow at Rome, being graffed vpon Soruices. As touching peaches in generall, the very name in Latine, whereby they are called Persica, doth euidently shew that they were brought out of Persis first; and that it is a fruit not ordinary either in Greece or Natolia, but a meere stranger there. Contrariwise wilde plums (as it is well knowne) grow euery where. I maruell therefore so much the more, that *Cato* made no mention thereof, considering that of purpose he shewed the maner, how to preserue and keep diuers wild fruits, till new came: for long it was first ere Peach trees came into these parts, and much adoe there was before they could be brought for to prosper with vs, seeing that in the Island Rhodes (which was their place of habitation next to Ægypt) they beare not at all, but are altogether barren. And whereas it is said, That Peaches be venomous in Persia, & do cause great torments in them who do eat therof; as also that the KK. of Persia in old time caused them to be transported ouer into Ægypt by way of reuenge to plague that country; and notwithstanding their poisonous nature, yet through the goodnes of that soile they became good and holesom: all this is nothing but a meere fable & a loud lie. True it is indeed, that the best writers who haue been painful aboue others to search out the truth, haue reported so much concerning the tree Persea; which is far different from the Peach tree Persica, & beareth fruit like to Sebesten, of color red, and willingly would not grow in any country without the East parts: and yet the wiser & more learned Clerkes do hold, That it was not the tree Persea which was brought out of Persis into Egypt, for to annoy and plague the country, but that it was planted first by K. *Perseus* at Memphis. Whereupon it came, that *Alexander* the Great ordained, That all victors who had won the prize at any game there, should be crowned with a chaplet of that tree, to honor the memoriall of his great grandsires father. But how euer it be, certaine it is that this tree continueth greene all the yere long, and beareth euermore fruit one vnder another, new and old together. And to returne again to our Plum-trees, euident it is that in *Cato's* time they were not knowne in Italy, but all the Plum-trees which we now haue, are come since he died.

Chap. XIIII.

¶ *Of nine and twenty kinds of Fruits, contained vnder the names of Apples.*

OF Apples (that is to say, of fruits that haue tender skins to be pared off) there bee many sorts. For as touching Pome-citrons, together with their tree, we haue already written. The Greekes call them Medica, according to the name of the country from whence they first came in old time. As for Iujubes, as also the fruit Tuberes, they bee likewise strangers as

well as the reſt; and long it is not ſince they arriued firſt in Italy; the one ſort out of Africk, G
the other,namely Iujubes,out of Syria: & *Sextus Papinius* (whom my ſelf in my time ſaw Conſul of Rome) was the firſt man that brought them both into theſe parts; namely in the later end of *Auguſtus Cæſar* the Emperor,and planted them about the rampiers of his campe, for to beautifie the ſame. Howbeit, to ſay a truth, their fruit reſembled rather berries than apples; yet they make a goodly ſhew vpon the rampiers: and no maruell, ſince that now adayes whole groues of trees begin to ouertop and ſurmount the houſes of priuat perſons.

Concerning the fruit Tuberes there be two ſorts thereof, to wit, the white and the reddiſh, called alſo Sericum, of the colour of ſilke.

The Apples named Lanata are held in manner for ſtrangers in Italy, and are knowne to grow but in one place thereof, and namely within the territory of Verona. Couered they be all ouer H
with a kind of down or fine cotton, which albeit both quince and peach be clad and ouergrown with in great plenty, yet theſe alone cary the name thereof: for otherwiſe, no ſpecial propertie are they known by to commend them.

A number of apples there are beſides, that haue immortaliſed their firſt founders and inuenters, who brought them into name, & cauſed them to be known abroad in the world; as if therin they had performed ſome worthy deed beneficiall to all mankinde. In which regard, why ſhould I think much to rehearſe & reckon them vp particularly by name? for if I be not much deceiued, thereby will appeare the ſingular wit that ſome men imployed in graffing trees; and how there is not ſo ſmall a matter, ſo it be wel and cunningly done, but is able to get honor to the firſt author, yea, and to eterniſe his name for euer. From hence it comes, that our beſt apples I
take their denominations of *Matius*, *Ceſtius*, *Manlius*, & *Claudius*. As for the quince-apples, that come of a quince graffed vpon an apple ſtock, they are called Appiana, of one *Appius* who was of the *Claudian* houſe, and firſt deuiſed and practiſed that feat. Theſe apples cary the ſmel with them of quinces: they beare in quantitie the bigneſſe of the Claudian apples, and are in color red. Now leſt any man ſhould think that this fruit came into credit by reaſon only of partiall fauor, for that the firſt inuentor was a man deſcended from ſo antient & noble a family, let him but think of the apples Sceptiana, which are in as great requeſt as they for their paſſing roundneſſe; and they beare the name of one *Sceptius* their firſt inuentor, who was no better than the ſon of a ſlaue lately infranchiſed. *Cato* maketh mention of apples called Quiriana, as alſo of Scantiana, which he ſaith the maner is to put vp in veſſels and ſo keep them. But of all others, K
the laſt that were adopted, and tooke name of their patrons and inuentors, be Petiſia: though they be little, yet are they paſſing ſweet and pleaſant to be eaten.

Other apples there are that haue ennobled the countries from whence they came, and caried their names, to wit, Camerina and Græcula. All the reſt took name either vpon ſome occaſion or propertie that they haue: to wit, of brotherhood, as the twin-apples Gemella, which hang one to another by couples, and neuer are found ſingle, but alwaies grow double: of their color, as the Serica, which for their freſh hew are ſo called: of kinred and affinitie, as the Melapia: for their reſemblance and participation of apples and peares together, as a man would ſay, Peare-apples, or pom-poires: of their haſty ripeneſſe, as the Muſtea [*i.* haſty apples;] which now of their ſweet taſt of hony, are called Melimela [*i.* hony apples:] alſo of their exquiſit roundneſſe L
like a bal, as the Orbiculata [*i.* the round apples.] That theſe apples came firſt from their natiue country Epirus, appeareth by the Greeks, who call them Epirotica. Again, ſome there be that take their denomination of their forme, reſembling womens paps or breaſts, as namely Orthomaſtica. [*i.* the Breſt-apples.] Others, for that their condition is to haue no pepins or ſeed within them, be called of the Belgians, Spadoma, as one would ſay, Guelded apples. As for the Meloſolia, [*i.* the leafe apples] they be ſo called, becauſe they haue one leafe and otherwhile twain breaking forth of their ſide in the very mids. The ragged apples Pannucea take this name, for that of all others they ſooneſt be riueled. The Puffes named Pulmonea are houen fooliſhly, and ſwell I cannot tell how, with little or nothing in them. Some in colour reſemble bloud, they M
are ſo red, becauſe at firſt they were graffed vpon a mulberry. But all apples ordinarily are red on that ſide that regardeth the Sun.

As for wildings and crabs, little they be all the ſort of them, in compariſon: their taſt is well enough liked, and they cary with them a quick and ſharp ſmel: howbeit this gift they haue for their harſh ſoureneſſe, that they haue many a foule word and ſhrewd curſe giuen them, and that they

A they are able to dull the edge of any knife that ſhal cut them. To conclude, the Dacian Apples are of all others in manner leaſt accepted, notwithſtanding they be firſt mellow, and would be gathered betimes.

Chap. XV.

¶ *Of Peares. And of the varietie of graffing.*

VPon the ſame cauſe there be Peares alſo reproched with the name of Pride, and are called the Proud-peares: little they are, but quickley ripe, and as ſoone gone. Of all others the Cruſtumine peares be moſt delicate and pleaſant in taſt. Next to them in requeſt are the
B Falern peares, ſo called for their great abundance of liquor, as it were wine, wherof they be full. And theſe are likewiſe named the milk-peares: but ſuch of them as are of color black, be called the Syrian pears. As for other pears, they haue ſundry names according to the countries where in they grow. Howbeit theſe peares following, retain their name ſtill in all places, and repreſent alwaies the memoriall of thoſe that firſt planted or graffed them, to wit, Decimiana of one *Decimus*, a known citizen of Rome: of which is alſo a baſtard kind which they call Pſeudodecimiana. Likewiſe, the Dolobellian peare, of one *Dolobella*: and thoſe are of all other the longeſt tailed. As touching the Pompeian peares, which be alſo called the Pap or Teat-peares, the Liceri-
an, the Seuerian, and of their race the Tyrannian, they differ one from another in the length of their ſteale. The red Fauonian peares be ſomwhat greater than the abouenamed Proud-pears.
As for the Laterian and Anitian, which be not gathered nor ripen vntill Autumne be paſt, they
C haue a prettie tart and ſouriſh taſt, but natheleſſe pleaſant ynough. The Tyberian peares beare the name of *Tiberius* the Emperor, for that of all others he loued that fruit beſt: they might go for Lycerians well ynough, ſo like they be vnto them, ſaue onely that they grow big, and are more deeply coloured with the Sunne.

Moreouer, there are peares which are knowne by no other name than of the countries where they grow, namely, thoſe of Ameria which be more lateward than any other: the Picentine, Numantine, Alexandrine, Numidian, Grecian, and among them the Tarentine. Alſo the Signine peares, which many call Teſtacea, of the color of earthen pots that they reſemble; like as others be named Onychium, for that they repreſent the Onyx ſtone, or a mans naile; as likewiſe thoſe
D which be called Purple-peares.

Furthermore, peares take their name of the odour which they yeeld: thus there be Myrapia, to wit, Aromaticall-peares, Laurell, and Nard-pears. Of the time alſo when they be ripe, as the Barley-pears: of the forme of their neck, as the Bottle-peares called Ampullacea: of their thick skin, as the Coriolana. As for the Gourd-pears, they are by nature of a brutiſh or ſauage kind; ſo harſh, ſo foure and eager a liquor they doe yeeld

Many ſorts of peares there are, whereof we can giue no certain reaſon for their denomination, namely, the Barbarian and Venerian peares, which alſo be called Colored: likewiſe, the roiall peares, which hang or rather ſticke flat to the tree, ſo ſhort a ſteele they haue. The Patritian alſo and Voconian peares, which are both green and long. Moreouer, *Virgil* hath ſpoken of the
E Volemian peares or wardens, which he had from *Cato*, who alſo nameth the Sementine or the haſty and ſoon ripe peares. So as in this point verily the world is growne alreadie to the higheſt pitch, inſomuch, as there is not a fruit, but men haue made trial and many experiments, for euen in *Virgils* daies the deuiſe of graffing ſtrange fruits, was very riſe: conſidering that he ſpeakes of the Arbute tree graffed on Nut-trees, the Plane vpon Apple-trees, and the Elme vpon Cherrie ſtockes. In ſuch ſort, as I ſee not how men can deuiſe to proceed farther. And certes for this long time, there hath not beene a new kind of Apple or other fruit heard of.

And yet as induſtrious as men haue been that way, they are not permitted to graffe all manner of trees indifferently one in another, no more than it is lawfull to graffe vpon buſhes and thornes: ſeeing that it is not ſo eaſie a matter to appeaſe lightenings: for looke how many ſorts
F of trees are thus engraffed contrarie to nature, ſo many kinds of lightenings and thunderbolts by report, are flaſhed and ſhot at once.

Peares naturally are more ſharpe-pointed at one end than Apples. And among them, the Greeke peares, the Gourd and Laurell peares are laſt of all others ripe, for they hang vpon the tree vntil Winter, and they mellow with very froſt: like as the Amerine and Scantiane apples.

Furthermore, peares are kept and preſerued as grapes, and after ſo many waies: but none of them

them are put in barrels as plums be. Finally, Peares and Apples both, haue the properties of G
wine: and in like sort Phy ſicians be wary how they giue them to their patients. Howbeit, when
they be ſodden in wine and water, they ſerue in ſtead of a broth or grewell: & ſo do no fruit els
but Pome and Peare-Quinces.

CHAP. XVI.

¶ *The manner how to preſerue Apples.*

THe generall rules to keep and preſerue Apples, are theſe, *Imprimis*, That the ſolars be wel
planked and boorded in a cold and drie place; prouided alwaies, that the windows to the
North do ſtand open, eſpecially euery faire day. *Item*, to keep the windows into the South H
ſhut, againſt the winds out of that corner: and yet the North winds alſo where they blow, doe
cauſe Apples to ſhrink and riuell illfauouredly. *Item*, That Apples be gathered after the Æqui-
nox in the Autumne: and neither before the full of the Moone, nor the firſt houre of the day.
Moreouer, that all the Apples which fell, be ſeuered from the other by themſelues, and laid a-
part: alſo that they be bedded vpon ſtraw, mats, or chaffe vnder them: that they be ſo couched as
that they touch not one another, but haue ſpaces between to receiue equall aire for to bee ven-
ted. To conclude, this is well knowne, that the Amerine Apples, doe laſt and keepe good long,
whereas the honie Apples will abide no time.

CHAP. XVII. I

¶ *How to keep Quinces, Pome-granats, Peares, Sorviſes, and Grapes.*

FOr the good keeping and preſeruing of Quinces, there muſt be no aire let into them where
they are encloſed: or elſe they ought to be confected in ſodden honey, or boiled therein.

Pomegranats ſhould be plunged into ſea-water boiling, and ſo hardened therein: and af-
ter that they be dried in the Sun three daies, (ſo as they be not left abroad in the night to take
dew) they would be hanged vp in a ſolar, and when a man liſt to vſe them, then they muſt be wel
waſhed in freſh water. *M. Varro* ſets downe the manner to keep them within great earthen veſ-
ſels, in ſand. And if they be not ripe, he would haue the earthen pots bottomes broke off, and ſo
the Pomegranates to be put in, and couered all ouer with mould: but the mouth therof muſt be K
well ſtopped for letting any aire in; prouided alwaies, that the ſteele and the branch wherto the
fruit groweth, be pitched. For ſo (quoth he) they will not giue ouer to grow ſtill, yea, and proue
bigger than if they had remained vpon the tree. As for other Pomegranats [*i.* that are ripe] they
may be wrapped and lapped one by one in fig-leaues, ſuch as are not fallen, but plucked from
off the tree greene, and then to be put into twigge paniers of oiſiers, or elſe daubed ouer with
potters clay.

He that would keep Peares long, muſt put them in earthen veſſels turned with the bottomes
vpward, well varniſhed or anneiled within, couered alſo with ſaw duſt or fine ſhauings, and ſo
enterred. As for the Tarentine Peares, they abide longeſt on the tree ere they be gathered. The
Anitian Peares be well preſerued in cuit-wine.

As for Soruiſſes, they are kept alſo in trenches within the ground, but the couer of the veſſel L
whereinto rhey are put, ought to be well plaſtered all ouer, and ſo ſtand two foot couered with
earth: alſo they may be ſet in a place expoſed open to the Sun, with the bottome of the veſſells
vpward: yea, and within great barrels they may be hung vp with their branches and all, after the
manner of grape-cluſters.

Some of our moderne writers handle this argument more deepely than others, and fetch the
matter farre off, giuing out rules in this manner, ſaying, That for to haue Apples or Grapes *de*
garde, that is to ſay, fit to be preſerued, and to laſt long; the trees that beare the one and the o-
ther, ought to be pruned and cut betimes, in the waine of the Moone, in faire weather, and when
the winds blow drie. Likewiſe they affirme, That fruits to be preſerued, would be choſen from M
drie grounds: gathered before they be full ripe: and this would be looked vnto in any hand, that
the Moon at the gathering time, be vnder the earth, and not appearing in our hemiſphære. And
more particularly, for Grape bunches they would be gathered with a foot or heele from the old
hard wood, and the Grapes that are corrupt and rotten among rhe reſt, be clipped off with a
paire

A paire of ſheers, or plucked out with pincers: then to be hung vp within a great new earthen veſ-
ſell well pitched; with the head or lid thereof thoroughly ſtopped and plaſtered vp cloſe, to ex-
clude all aire. After which manner, they ſay Soruiſſes and Peares may be kept, but ſo, as in any
caſe the twigs ond ſteeles whereby they hang, be well beſmeared with pitch. Moreouer, order
would be giuen, that the barrels and veſſells wherein they are kept, be far ynough from water.
Some there be again who keep Grapes together with their branch, after the ſame maner in pla-
ſter: but ſo, as both ends of the ſaid branch ſticke in the head of the ſea-Onion Squilla: and o-
thers let Grape-cluſters hang within hogſheads and pipes hauing wine in them: but ſo, as the
Grapes touch not the wine in any caſe. There be alſo that put Apples and ſuch fruits in ſhal-
low pans or pancheons of earth, and let them ſwim and flote aloft vpon the wine within their
B veſſels: for beſides that this is a way to preſerue them, the wine alſo (as they think) will thereby
get a pleaſant & odoriferous taſt. Others ye haue beſides, that chuſe rather to preſerue al theſe
fruits, as well Apples, Pears, &c. as Grapes, couered in Millet ſeed. Howbeit, the moſt part dig
a trench or ditch two foot deep in the ground, they floore it with ſand in the bottome, and lay
their fruits thereupon; then they ſtop the top with an earthen lid, and afterwards couer al with
earth. Some there are which ſmeare their bunches of Grapes all ouer with potters clay; and
when they are dried in the Sun, hang them vp in ſolars for their vſe: and againſt the time that
they ſhould occupie them, ſteep them in the water, and ſo waſh off the foreſaid clay. But for to
keep Apples that are of any worth, they temper the ſame clay with wine, and make a morter,
thereof, wherein they lap the ſaid Apples. Now if thoſe Apples be of the beſt kind and right
C ſoueraigne, after the ſame ſort they couer them with a cruſt of the like paſt or morter, or elſe
clad them within a coat of wax: and if they were not fully ripe afore, they grow by that means
and break their cruſt or couer what euer it be. But this would not be forgotten, that they vſe al-
waies to ſet the Apple or fruit vpright vpon the taile, how ſoeuer they be kept. Some there are
who gather Apples and ſuch like fruit with their ſlips and ſprigs, hide them within the pith of
an Elder tree, and then couer them in earth, as is before written. And others there are, who for
euery Peare or Apple, haue a ſeuerall earthen pot, and after that their lids be well cloſed and
ſtopped with pitch, then they encloſe them again with great veſſels or tuns. Nay ye ſhal haue
ſome to lap them with flocks and wooll, and ſo put them in caſes, and them they ſee wel luted
with morter made of clay and chaffe tempered together. Some order them in the ſame ſort,
D but they put them in earthen pans: and others make no more adoe, but dig a hole in the ground,
floore the bottom with a courſe of ſand, put the Apples or fruit within, & then anon when they
are thus buried, couer all with mould. Theſe be that vſe Quinces in this wiſe; they take them,
anoint them with wax comming out of Pontus, and let them afterwards to ly couered in hony.

Columella mine Author reporteth, That fruits will keep well in earthen pots thoroughly pit-
ched, and afterwards ſet in pits, and drenched in ceſternes of water. In the maritime coaſts of
Liguria next to the Alpes, they vſe to take Grapes after they be dried in the Sun & wrap them
within bands of ruſhes and reeds, put them vp in little barrels, and ſtop them cloſe with pla-
ſter. The Greeks haue the ſame faſhion: but they take for that purpoſe, the leaues of the Plane-
tree, of the vine it ſelfe, or elſe the fig-tree, after they be dried one day in the ſhade: and when
E they be in the barrell, betweene euery bed of grape cluſters, they couch a courſe of grape ker-
nels, and ſuch refuſe remaining after the preſſe. And in this manner are the grapes of Coos and
Berytus preſerued: and for ſweetneſſe and pleaſant taſt, there are no better to be found. And
ſome there be that for to counterfeit theſe excellent Grapes, beſmeare them with lie aſhes ſo
ſoon as euer they be pulled from the Vine, and preſently drie them in the Sunne: which done,
they enwrap them within leaues, as hath been ſaid before, and ſo couch them cloſe within the
cake of preſſed grapes. Neuertheleſſe, there be diuers that chuſe rather to keepe Grapes in the
ſaw duſt or ſhauings of Firre-wood, Poplar, or Aſh. Some are afraid to let grapes hang neer to
Apples, Pomegranates, and ſuch like fruit, and therefore giue in charge to let them preſently
after they be gathared, for to be hung vp in garners or bourded loſts: ſuppoſing that the duſt
F which they gather from aboue, is the beſt couer to defend and preſerue them. The remedie to
keepe Weſpes from them, is to ſpurt or ſquirt oile out of a mans mouth vpon them. And thus
much concerning the way to preſerue Grapes and other fruits aforeſaid. As for Dates, we haue
ſpoken ſufficiently before of them.

CHAP.

CHAP. XVIII.

¶ *Of Figs, 29 sorts of them.*

OF all other fruits that haue tender pils or skins, and are called in Latine, Poma, Figges are the biggeſt: for ſome of them are found to be as great as Peares. As touching the Sycomores of Ægypt and Cypres, and of their admirable fruit we haue written ynough in the treatiſe of forraine Trees. The Idæan Figs that come from the mountaine Ida, are of color red, of the bigneſſe of Oliues, only rounder they be, & in taſt reſemble Medlars. In the region about Troas neare to the ſaid hill Ida, they call that fig-tree Alexandrina. It is as thicke as a mans arme about at the cubite or elbow, and full of branches: the wood thereof is tough and ſtrong, howbeit, pliable to wind and bend which way a man would haue it. Void of milky ſubſtance it is, clad with a green barke, bearing leaues like the Tillet or Linden tree, but that they be ſoft. *Oneſcritus* writes, that the Fig-trees in Hyrcania beare more pleaſant fruit than ours in Italie, without all compariſon: alſo that they carrie a greater burden, and be farre more plentifull, inſomuch, as one of them ordinarily yeelds 270 Modij of Figs. We haue here alſo in Italie many Fig-trees brought out of other forrain countries, to wit, from Chalcis and Chios: wherof there be many ſorts. For both our Lydian Figs which are of a reddiſh purple color, and alſo the Mamillane or teat-Figs, haue a reſemblance of the ſaid Chalcidian and Chian Figs, yea, and the Caliſtruthion Figs beyond others not a little, in goodnes of taſt: and theſe of all the reſt are the coldeſt. As touching the Affricane Figs, which many men preferre before all others, they hold the name of Affricke, as if it were their natiue countrey: and yet there is a great queſtion thereabout, and I wot not well what to ſay thereof, conſidering that it is not long agoe that Affrick begun firſt to haue Fig-trees. For the Alexandrine Figs are of the blacke kind, hauing a white riſt or chamfre, and are ſurnamed Delicate. The Rhodian Fig is likewiſe blacke of hue: and ſo is the Tiburtine, which alſo is of the haſtie kind, and ripe before others.

Moreouer, there be certaine Figs which beare the names of thoſe that brought them firſt into Italy: namely, the Liuian and Pompeian, and ſuch are fitteſt to be dried in the Sun and ſo to be kept all the yeare long for a mans vſe: like as the illfauoured, fooliſh and gaping Figs Mariſcæ: as alſo thoſe that are ſpeckled with ſpots like the leaues of Laconian reeds.

There are beſides the Herculanean, Albicerate and Aratian white Figges, which of all other are moſt flat and broadeſt, and withal haue the leaſt taile or ſtecle wherby they hang. The Porphyrite Figs firſt ſhew vpon the tree, and ordinarily be longeſt tailed. The ſmalleſt Figs called the popular Figs, which alſo are of al others the baſeſt & of leaſt account, come next after and beare the Porphyrites companie. Contrariwiſe, the Chelidonian Figges be the laſt: and ripen againſt Winter.

Moreouer, certain Figs there be which are both early, & alſo lateward: namely, ſuch as bear twice a yeare: and be both blacke and white: for they are ripe firſt in haruеſt, and afterwards, in time of vintage. Late alſo it is before the Duracinæ be ripe, ſo called of the hard skin which they haue. Alſo ſome there be of the Chalcidian kind which beare thrice a yeare. At Tarentum there grow none but ſuch as are exceeding ſweet, and thoſe they call Omas [or rather Oenadas, taſting of wine.]

Cato in his treatiſe of Figs writes thus, The vnſauorie Fig dotes, Mariſcæ, would be ſowne in an open, light, and chalkie ground. But the Affricane, Hirculane, and the Winter Saguntine Figges, as alſo the Telliane (which are blacke and long tailed) loue a fatter ſoile, or elſe well dunged.

After this, Figges haue changed into ſo many kinds, and altered their names very often: in ſuch ſort that by this point it is euident, how the world is altered, and to what varietie this life is ſubiect. In ſome prouinces, as namely in Mœſia, there be winter Figs that hang all Winter long: but they come to be ſuch, more by art and cunning, than naturally of themſelues. For ſo ſoone as Autumne is paſſed, and Winter approches, they vſe to couer with dung certaine little Fig-trees which they haue, and together with them the green yong Figs that they find on them in Winter: and when they haue continued ſo the ſharpe time of dead Winter, ſo ſoone as the weather beginnes to be more warme and temperate, they diſcharge both fruit and tree of their dung: which being thus let out again (as it were) where they ſeemed buried, and now comming to

to light, they no ſooner find the freſh aire, & another kind of nouriſhment differing from that, whereby they liued, but doe embrace and receiue the comfort of the new Sun moſt greedily, as if they were new born and reuiued: in ſuch ſort, as that in Mœſia, notwithſtanding it be a moſt cold region, ye ſhall haue the figs of theſe trees to ripen, when others begin to bloſſom, and by this means become early and haſty figs in another yeare.

Now foraſmuch as we are fallen to mention the figs in Affrick, which were in ſo great requeſt in the time of *Cato*, I am put in mind to ſpeake ſomewhat of that notable opportunity and occaſion which by the means of that fruit he took for to root out the Carthaginians, & raſe their very city. For as he was a man who hated deadly that city, and was otherwiſe carefull to prouide for the quiet and ſecuritie of his poſteritie, he gaue not ouer at euery ſitting of the Senat, to importune the Senators of Rome, and to cry out in their eares, That they would reſolue and take order to deſtroy Carthage: and in very truth one day aboue the reſt, he brought with him into the Senat houſe an early or haſty fig which came out of that country, and ſhewing it before all the lords of the Senat, I would demand of you (quoth he) how long ago it is (as you think) ſince this fig was gathered from the tree? And when none of them could deny but that it was freſh and new gotten: Lo (quoth he) my maſters all, this I do you to wit, It is not yet full three daies paſt ſince this fig was gathered at Carthage: ſee how neere to the walls of our citie we haue a mortall enemie. Vpon which remonſtrance of his, preſently they concluded to begin the third and laſt Punick war, wherein Carthage was vtterly ſubuerted and ouerthrown. Howbeit *Cato* ſuruiued not the raſing and ſaccage of Carthage, for he died the yeare immediately following this reſolution. But what ſhall we ſay of this man? whether was more admirable in this act, his prouident care and prompt promptneſſe of ſpirit; or the occaſion preſented by the ſudden obiect of the fig? was the preſent reſolution and forward expedition of the Senat, or the vehement earneſtneſſe of *Cato*, more effectuall to this enterpriſe? Certes, ſomewhat there is aboue all, & nothing in mine opinion more wonderful, that ſo great a ſignory and ſtate as Carthage, which had contended for the Empire of the world for the ſpace of 120 yeres, and that with the great conquerours the Romanes, ſhould thus be ruined and brought vtterly to nought, by occaſion of one fig. A deſigne that neither the fields loſt at Trebia and Thraſymenus, nor the diſgrace receiued at the battell of Canna, wherein ſo many braue Romans loſt their liues, and left their dead bodies on the ground to be interred, could effect: nay not the diſdain that they took to ſee the Carthaginians incamped and fortified within 3 miles of Rome, ne yet the braueadoes of *Annibal* in perſon, riding before the gate Collina, euen to dare them, could euer bring to paſſe. See how *Cato* by the means of one poore fig, preuailed to bring and preſent the forces of Rome to the very walls of Carthage.

There is a fig tree called Navia, honoured with great reuerence, in the common Forum and publique place of juſtice at Rome, euen where the ſolemne aſſemblies are held for election of Magiſtrats, neere to the Curia, vnder the old ſhops called Veteres: as if the gods had conſecrated it for that purpoſe: neere (I ſay) it is to the Tribunal named Puteal Libonis, & there planted by *Attius Navius* the Augur, where the ſacred reliques of his miracle, to wit, the Raſor and the Whetſtone, were ſolemnely interred: as if it came of the owne accord from the ſaid Curia into the Comitium, and had not bin ſet by *Navius*. This tree if it begin at any time to wither, there is another replanted by the prieſts, who that way are very carefull and ceremonious. But a greater reſpect is had of another in remembrance of the firſt fig tree named Ruminalis (as it were) the nurſe of *Romulus* and *Remus*, the two yong princes foundlings, and founders alſo of the city of Rome: for that vnder it was found a ſhe wolfe, giuing to thoſe little babes the teat (in Latine called Rumen:) and for a memoriall hereof there is a monument of braſſe erected neere vnto it, repreſenting that ſtrange and wonderfull ſtory. There grew alſo a third fig tree before the temple of *Saturne*, which in the yeare 260 after the foundation of the city of Rome, was taken away, at what time as a chappell was builded there by the Veſtal nuns, and an expiatory ſacrifice offered, for that it ouerthrew the image of *Sylvanus*. There is a tree of the ſame kind yet liuing, which came to grow of it ſelf, no man knows how, in the midſt of the Forum Romanum, and in that very place where was the deepe chinke and gaping of the ground, that menaced the ruine of the Roman empire; which fatall and portentuous gulfe the renowned knight *Curtius* filled vp with the beſt things that were to be found in the city, to wit, his Vertue and Piety incomparable, teſtified by a moſt braue & glorious death. In the very ſame place likewiſe there is

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an Oliue and a Vine,which came thither by as meere a chance,but afterwards well looked and trimmed by the whole people,for to inioy the pleasure and shade thereof. And there also stood an altar,which afterward was taken away by occasion of the solemne shew of sword-fencers, which *Iulius Cæsar* late Emperor,exhibited to do the people pleasure, which were the last that plaied their prizes,and fought at the sharp in the said Forum. To conclude,wonderfull it is to see,how the fruit of this tree maketh haste to ripe: a man would say that Nature therein sheweth all her skill and force to ripen figs altogether at once.

Chap. XIX.

¶ *Of the wilde Fig trees : and of caprification.*

THere is a kind of wild Fig trees,which the Latines call Caprificus,that neuer brings any fruit to maturitie; but that which it selfe hath not, it procureth to others, and causeth them to ripen. For such is the interchangeable course & passage of causes in nature,that as this thing putrifieth, that ingendreth; and the corruption of one is the generation of another. By this it comes to passe, that the wild fig tree breedeth certaine flies or gnats within the fruit thereof: which wanting nourishment, and not hauing to feed vpon in those figs, because they become rotten and putrified as they hang vpon the tree, they flie vnto the other kinde of gentle and tame fig-trees,where they settle vpon the figs, and greedily nibble thereupon, vntill they haue made way and pierced into them; and by that means let in at first the breath of the warme Sun,and that comfortable and vegetatiue aire besides that helpeth to ripen them. Soon after they suck vp and spend the milky humor which they find there, and which keeps the figs still as it were in their infancie,and hindreth their speedy and timely maturitie. True it is,that the figs in time would ripen of themselues by the power and benefit of Nature only: howbeit skilfull and industrious husbandmen take order alwaies to set these wild fig trees neere to the place where other fig trees grow,but with due regard of the winde side, that when the foresaid gnats breake forth and are ready to fly out,a blast of wind might carry them to the other. And hereupon came the deuise and inuention to bring whole swarms & casts of them, as they hang one to another,from other places,that they might settle vpon the figs to consume the raw moisture within. Now if the soile be lean and hungry, and the fig trees growing therupon exposed to the North wind,there is no such need of this help: for the figs will dry sufficiently of themselues,by reason as well of the scituation of the place,as the clifts and rifts in them,which will effect that which the gnats or flies aboue named might performe. The like effect is to be seen also where much dust is,namely,if a fig tree grow neere vnto a high-way much frequented and trauelled by passengers. For the nature of dust is to dry and soke vp the superfluous moisture of the milke within figs. And therefore when they are thus dried,whether it be by the meanes of dust,or of the said flies feeding,which is called Caprification,they fall not from the tree so easily,by reason they are discharged of that liquid substance which maketh them both tender, and also ponderous,weighty,and brittle withall.

All figs ordinarily are tender and soft in handling. Those which be ripe haue small graines within them: their succulent substance besides,when they begin to ripen, is white like milke: but when they are perfectly ripe it is of the colour of hony. They will hang vpon the tree vntil they be old,and when they are aged,they yeeld a certain liquor which distilleth from them in maner of a gum,and then in the end become dry.

The better sort of figs haue this honor and priuiledge,to be kept in boxes and cases for the purpose: and chiefly those which come from the Isle Ebusus, which of all others are the very best and largest: yea,and next to them those that grow in the Marrucines country. But where they are in more plenty they put them vp in great vessels called Orcæ, as namely in Asia: also in barrels & pipes,as at Ruspina a city in Barbary. And in very truth,the people of those countries make that vse of them when they be very dry,that they serue both for bread and meat. For *Cato* setting downe an order for dyet and victuals fit and sufficient for labourers,ordained,that they should be cut short of their other pittance,when figs are ripe,and make vp their ful meals with it. And it is not long since the manner came vp to eat fresh new figs with salt and powdered meats, in stead of cheese. And for to be eaten in this sort,the figs called Coctana (whereof we haue written before) and the dried figges Caricæ are commended: as also the Cauneæ, which

which when *M. Crassus* should imbarque in that expedition against the Parthians(wherein he was slain) presaged ill fortune,and warned him not to go forward: namely,when at the very instant that he was ready to set foot a ship-bord,there was a fellow heard to cry those figs for to be sold,pronouncing aloud,Cauneas,Cauneas: which word in short speaking was all one with *Cave ne eas* [*i.* Beware of this voiage,and go it not.] All these sorts of figges *L. Vitellius* brought out of Syria,into his ferm or manor that he had neere Alba,hauing L. Gouernor or Lieutenant generall in those parts,namely,in the later end of *Tiberius Cæsar* the Emperor: and the same *Vitellius* was afterward Censor at Rome.

Chap. XX.

¶ *Of Medlars : three kinds of them.*

MEdlars and Seruices may well and truely be ranged in the ranke of Apples and Peares: Medlars be of three sorts; namely, Anthedon, Setania, and the third which they call Gallicum, [*i.* the French Medlar]which is of a bastard nature,yet it resembles the Anthedon rather than the other. As for the Setanian Medlar, the fruit is greater and whiter than the rest; also the kernels or stones within are of a more soft substance, and not altogether so wooddy and hard. The rest are smaller than these Setania or common Medlars,but they haue a better smell and more odoriferous,and withall will last longer. The tree it selfe that beareth Medlars is reckoned among the greatest sort: the leaues before they fall wax red: the roots be many in number,and run downe right deep into the ground: by which meanes,vnneth or verie hardly they be quite rooted vp. This tree was not known in Italy by *Cato's* dayes.

Chap. XXI.

¶ *Of Services, foure kinds.*

OF Seruices there be foure sundry sorts,differing one from another: for some of them are round like apples,others pointed at the end as Peares; a third kinde are fashioned like egs,as some long or tankard apples: and these are apt to be soon soure. For sweet sent and pleasant taft the round excell all others: the rest haue a rellish of wine. The best kinde of them are they that haue soft & tender leaues about their steles whereby they hang. The fourth sort they call Torminale, allowed onely for the remedie that they affoord to mitigate the torments and wringing of the colique. This tree is neuer without fruit, howbeit the smallest of all the rest,and differeth from the other,for it beareth leaues very like to the Plane. There are none of them that beare fruit before they be three yeares old. Lastly,*Cato* would haue Seruises to be preserued and condite in Cuit.

Chap. XXII.

¶ *Of the Wall-nut.*

THe next place to these for bignes,the Walnuts doe challenge,which they cannot claime for their credit and authoritie; and yet they are in some request among other licentious and wanton Fescennine ceremonies, at weddings: for lesse they be than Pine nuts, if a man consider the grosnesse of the body outwardly; but in proportion therto they haue a much bigger kernel within. Moreouer,Nature hath much graced and honoured these nuts with a peculiar gift she hath endued them with,namely,a double robe wherewith they are clad: the first is a tender and soft husk; the next,a hard and wooddy shel: which is the cause that at mariages they serue for religious ceremonies,resembling the manifold tunicles and membranes wherin the infant is lapped and enfolded within the womb: and this reason foundeth more probable, than that they should be scattered,because in their fall they rebound and make a ratling [to drowne (forsooth) all other noises from the bride-bed or chamber.] That these Nuts also were brought out of Persis first by commandement of the Kings,is euident by their Greeke names; for the best kind of them,they call Persicon,and Basilicon; as one would say, the Persian and Royall nut: and these indeed were the first names. Afterwards,the nut came to be named Caryon, (by all mens confession) for the heauinesse of head which it causeth, by reason of the

ſtrong ſmell. Their outward husk ſerues to die wooll: and the little nuts when they come new forth are good to giue the haire of the head a reddiſh or yellow colour. The experiment therof was firſt found by ſtaining folks hands as they handled them. The elder that nuts be & longer kept, the more oleous and fatty they are. The only difference in the ſundry kinds conſiſteth in the ſhel, for that in ſome it is tender and brittle, in others hard; in one ſort it is thin, in another thick: laſtly, ſome haue ſmooth and plain ſhells, others again be as full of holes and cranies.

Walnuts be the fruit alone that Nature hath incloſed with a couer parted in twaine, and ſo is ioyned and ſet together; for the ſhell is diuided and cleft iuſt in the middle, and each halfe reſembleth a little boat. The kernell within is diſtinguiſhed into foure parts, and between euerie of them there runneth a membrane or skin of a wooddy ſubſtance. As for other nuts, their meat is ſolid and compact, as we may ſee in Filberds and Hazels, which alſo are a kind of nuts, and were called heretofore Abellinæ, of their natiue place, from whence came good ones at firſt. They came out of Pontus into Natolia and Greece, and therefore they be called Pontick nuts. Theſe Filberds likewiſe are couered with a ſoft bearded huske, and as well the ſhell as the kernell is round and ſolid, all of one entire piece. Theſe nuts alſo are parched for to be eaten, and within their belly they haue in the mids a little chit or ſpirt as if it were a nauill.

As for Almonds, they are of the nature of nuts, and are reckoned in a third ranke. An vpper husk they haue like as Walnuts, but it is thin: like as alſo a ſecond couerture of a ſhell. The kernell differeth ſomewhat, for broader it is and flatter, and their skin more hard, more ſharpe, and hoter in taſte than that of other nuts. Now whether the Almond tree were in Italy during the life of *Cato*, there is ſome doubt and queſtion made; becauſe he nameth the Greeke nuts, which ſome do hold for a kind of walnut. Mention maketh he beſides of the Hazel nuts or filberds, as well the * Galbæ, as the Preneſtine, commended by him aboue all others, which hee ſaith are put vp in pots, and kept freſh and green within the earth. Now adaies the Thaſian and Albeuſian nuts be in great account; and two ſorts beſides of the Tarentine; whereof the one hath a tender and brittle ſhell, the other as hard: and thoſe are the biggeſt of all other, and nothing round. He ſpeaketh alſo of the ſoft ſhaled Filberds Molluſcæ, the kernels whereof doe ſwell and cauſe their ſhels to breake in ſunder.

* or Calue, ſ. Bold.

But to return again to our Walnuts: ſome to honor them interpret their names Iuglandes, as a man would ſay, the nuts of *Iupiter*. It is not long ſince I heard a knight of Rome, a gentleman of high calling, and who had bin Conſul, profeſſe and ſay, that he had certain walnut trees that bare twice a yeare. As for Fiſticks we haue ſpoken already of them. To conclude, theſe kind of nuts the aboue named *Vitellius* brought firſt into Italy at the ſame time, namely, a little before the death of *Tiberius* the Emperor: and withall, *Flaccus Pompeius* a knight of Rome, who ſerued in the wars together with him, caried them ouer into Spain.

Chap. XXIII.

¶ *Of Cheſtnuts eight kindes.*

WE entitule Cheſtens alſo by the name of Nuts, although indeed they are more aptly to be called a kind of Maſt. This fruit what euer it be is incloſed within a huske, and the ſame defended and armed all ouer with a rampier and paliſade (as it were) of ſharp pricks like the skin of an vrchin; whereas the Acorn and other Maſt is but half couered, and that defence in them is begun only. And certes, a wonderfull matter it is that we ſee ſo little ſtore by this fruit, which Nature is ſo carefull to hide and defend. Vnder one of theſe husks ye ſhall find ſomtime three Cheſtnuts, and thoſe hauing certain tough pils or ſhells very pliable. But the skin or filme within, and which is next to the body or ſubſtance of the fruit, vnleſſe it be pilled off and taken away, marreth the taſte of it, like as it doth alſo in other nut-kernells. Cheſtnuts if they be roſted are better and more pleaſant meat than otherwiſe. They vſe alſo to grind them to meale, and thereof is made a kind of bread, which poore women for hunger will eat. The firſt Cheſtnuts were known to grow about Sardis, & from thence were brought, wherfore the Greeks call them Sardinian nuts: but afterwards they came to be named διὸς βαλανοὶ, [*i.* *Iupiters* nuts] when as men began to graffe them; for thereby they became more excellent. And this day there be many ſorts of them. The Tarentine be gentle and not hard of digeſtion, and in forme flat and plaine. That which they call Balanitis, is rounder, it will ſoone be pilled and cleanſed,

cleanſed, and of it ſelfe will leape out of the skin. And of this kind, the Salarian is more neat, flat, and ſmooth: the Tarentine not ſo eaſie to be handled and dealt withall: the Corellian is more commended than the reſt; as alſo the Meterane, which commeth of it by graffing: the manner whereof we will ſhew when we come to treat of graffes. Theſe haue a red pilling, in which regard they are preferred before either the three cornered, or the blacke common ones, which be alſo called Coctiuæ, [*i.* Cheſtnuts to be boiled.] The beſt Cheſtnuts are they which grow about Tarentum, and Naples in Campaine. All the reſt are good in manner for nothing but to feed ſwine, * ſo cloſe ſticketh the pill or inner skin alſo, as if it were ſoudered to the kernell within, and ſo hard it is to ſeperate the one from the other.

* Scrupuloſa corticis interioris circa nucleum quoque ſerruminatione.

Chap. XXIIII.

¶ *Of Carobes: of fleſhie and pulpous fruits: of Mulberries: of liquid kernels or graines, and of berries.*

THe fruit called Carobes or Caracts, may ſeeme to come neare vnto the foreſaid Cheſtnuts, (ſo paſſing ſweet they be) but that their cods alſo are good to be eaten. They bee as long as a mans finger, and otherwhiles hooked like a faulcheon, and ah inch in bredth. As for maſt, it cannot be reckoned among fruit properly called Poma, and therefore we will ſpeak of them apart, according to their nature.

Now are we to treat of the reſt which are of a carnous ſubſtance: and thoſe are diuided into fruits that be ſoft and pulpous, and into berries. The carnoſity in Grapes and Raiſons, in Mulberries, and the fruit of the Arbut tree, differs one from the other. Againe, the fleſhy ſubſtance in Grapes between the skin and the liquid juice, is one, and that in Sebeſten is another. Berries haue a carnoſity by themſelues, as namely Oliues. Mulberies yeeld a juice or liquor within the pulpe thereof, reſembling wine. They be ordinarily of three colours: at the beginning, white; ſoone after, red; and when they be ripe, blacke. The Mulberrie tree bloometh with the laſt, but the fruit ripeneth with the firſt. Mulberries when they be full ripe, ſtaine a mans hand with the juice thereof, and make them blacke: but contrariwiſe being vnripe, they ſcoure them cleane. There is not a tree againe, wherein the wit of man hath bin ſo little inuentiue, either to deuiſe names for them, or to graff them, or otherwiſe, ſaue only to make the fruit fair and great. There is a difference which we at Rome doe make, betweene the Mulberries of Oſtia and Tuſculum.

There is a kind of Mulberries growing vpon the bramble, but their skin is much harder than the other. Like as the ground-ſtrawberries differ in carnoſitie from the fruit of the Arbut tree, and yet it is held for a kind of Strawberrie, euen as the tree it ſelfe is tearmed the Strawberrie tree. And there is not a fruit of any other tree, that reſembleth the fruit of an hearb growing by the ground, but it.

The Arbut tree it ſelfe ſpreadeth full of branches: the fruit is a whole yeare in ripening: by which meanes a man ſhall find alwaies vpon the tree, yong and old fruit together one vnder another; and the new euermore thruſts out the old. Whether it be the male or female that is barren, writers are not agreed. Surely the fruit is of baſe and no reckoning at all: no maruell therefore if the Latines gaue it the name Vnedo, for that one of them is enough to be eaten at once. And yet the Greeks haue two names for it, to wit, Comarum & Memecylon: whereby it appeareth, that there be as many kinds among the Latines alſo, although it be tearmed by another name, Arbutus. K. *Iuba* ſaith, that theſe trees in Arabia grow to the heigth of fiftie cubites.

As touching Graines and liquid Kernels, there is great difference betweene them: for firſt and formoſt, among very grapes, there is no ſmall diuerſitie in the skin, either for tendernes or thickneſſe: in the inner ſtones or pepins, which in ſome grapes are but ſingle, or one alone; in others double, and thoſe commonly yeeld not ſo much wine as the others do. Secondly, thoſe of Iuie and Elder differ very much, yea and the graines within a Pomegranat are not like to others in their forme, for they alone be made cornered and angle-wiſe; and ſeuerall as they bee, they haue not a particular skin of their own, but they are altogether clad within on, which is white: and yet they ſtand all wholly of a liquor and pulpous carnoſitie, eſpecially thoſe which haue within them but a ſmall ſtone or woodie kernell.

Semblably, there is as much varietie in berries: for oliues differ much from Bay berries: likewiſe thoſe of a Lote tree are diuers from them which the Corneil tree beares. The Myrtle alſo

differeth from the Lentisk in the verie berrie. As for the huluer or hollie berries, and the hawes of the white-thorn, they are without any juice or liquor: wheras Cherries be of a middle kind, betweene berries and graines. This fruit is white at the first, as lightly all berries be whatsoeuer: but afterwards some waxe greene, as Oliues and Baies; others turn red, as Mulberies, Cherries, and Cornoiles; but in the end they all become blacke, as Mulberries, Cherries, and Oliues.

Chap. XXV.

¶ *Of Cherries, eight kinds.*

Before the time that *L. Lucullus* defeated K. *Mithridates*, there were no cherrie-trees in Italy: but after that victorie (which was about the 680 yeare from the foundation of the citie of Rome) he was the man that brought them first out of Pontus, and furnished Italie so well with them, that within sixe and twentie yeres, other lands had part therof, even as far as Britain beyond the ocean. Howbeit (as we haue before said) they could neuer be brought to grow in Ægypt, for all the care and industrie employed about them. Of Cherries, the reddest sort bee called Apronia; the blackest, Actia: the Cæcilian be round withall. The Iulian Cherries haue a pleasant taft, but they must be taken new from the tree and presently eaten; for so tender they be otherwise, that they will not abide the carriage. Of all other, the Duracine Cherries be the soueraign, which in Campaine are called Pliniana. But in Picardie, and those low countries of Belgica, they make most account of the Portugall Cherries: as they do also who inhabite vpon the riuer Rhene. They haue a hew with them composed of three colors, between red, black and green, and alwaies look as if they were in ripening still. It is not yet full 5 yeres since the Cherries which they call Laurea, were known: so called they be, because they were grafted on a Bay-tree stocke, and thereof thy take a kind of bitternes, but yet not vnpleasant to the taft. There be moreouer Macedonian Cherries, growing vpon a small tree seldome aboue three cubits high: and yet there be certain dwarfe Cherries not full so tall, called Chameceraſti, [*i.* ground cherry-shrubs.] The Cherry-tree is one of the first that yeelds fruit to his master, in token of thankfulnesse & recognisance of his paines all the yeare long. It delights to grow in cold places and exposed to the North. The Cherrie wil drie in the sun, and may be kept in barrels like Oliues.

Chap. XXVI.

¶ *Of the Corneile and Lentiske tree.*

The same care is had in conditing the berries of the Corneil and the Lentiske, as in preseruing Oliues: so curious are men to content their tooth, as if all things were made to serue the belly. Thus we see, how things of diuers relishes are mingled together, and one giues a taft vnto another, and causeth to be pleasant at the tongues end. Nay we entermingle all climats and coasts of heauen and earth to satisfie our appetite: for to one kind of meat wee must haue drugs & spices fetcht as far as from India: to another, out of Ægypt, Candie, and Cyrene: and in one word, for euery dish we haue a seuerall land to find vs sawce. To conclude, wee are growne to this passe, that we cease not to sophisticate our viands, euen with hurtfull things, so they taft well: yea and to make dishes of very * poisons, because we would deuoure and send all downe the throat. But more plainely hereof, in our professed discourse of the nature and vertue of Hearbs.

* Mushroms

Chap. XXVII.

¶ *The diuersitie of tasts and sauours.*

In the meane time, as touching those things which are common as well to all fruit, as juices and liquors: first and formost we find of tasts 13 seuerall kinds; to wit, sweet, pleasant, fattie, bitter, harsh and vnpleasant, hot and burning at the tongues end, sharpe and biting, tart or astringent, sowre, and salt. Ouer and besides all these, there be three others of a most strange and wonderfull nature. The first is that, wherin a man may haue a smacke of many tasts together, as in wines: for in them a man shall find an harsh, sharpe, sweet, and pleasant relish all at once; and yet these all differ from the natiue verdure of wine. A second sort there is besides, which caries a strange & different taft verily from the thing it selfe, and yet it hath besides the proper and peculiar

A culiar taft of the owne substance, as the Myrtle: for it carrieth a seuerall taft by it selfe, proceeding from a certaine kind, mild, and gentle nature, which cannot truly be called either sweet, fattie, or pleasant, if we would speake precisely. Laft of all, water hath no taft at all of any juice or liquor whatsoeuer, and yet therein is a flat taft by it selfe, which is called waterish, that nothing else besides hath: for if a man do taft in water a rellish of any sap or liquor, it is reputed for a bad and naughtie water.

Furthermore, a great and principall matter of all these tasts, lyeth in the sauour and smell; which is connaturall vnto the taft, and hath a great affinitie with it; and yet in water, is neither one or other to be perceiued: or if any be felt either by tongue or nose, it is faultie, that is certaine. Finally, a wonderfull thing it is to consider, that the three principall Elements whereof B the world is made, namely, Water, Aire, and Fire, should haue no taft, no sauor, nor participation of any sap and liquor at all.

Chap. XXVIII.

¶ *The juice and sap of Fruits and Trees: their colours and odours: the nature of Apples, and such soft Fruits: and the singular commendation of all Fruits.*

To begin with all, The Peare, The Mulberry, & the Myrtle-berrie, haue a juice or sap within them, resembling wine, * no maruell then, of Grapes, if they haue the like. Oliues, Bay-C berries, Walnuts and Almonds, haue a fattie liquor in them. The Grape, the Fig, and the Date, carie a sweet juice with them. Plums haue a waterish taft.

* *Minima quod miremur uuis.* Others distinguish thus, *Minime (quod mireris) uuis*, to this sense: whereas in grapes (and that may be a wonder) there is none such.

There is no small difference in the colour also that the juice of fruits do beare: Mulberries, Cherries, and Corneils, haue a sanguine and bloudie liquor: so haue the blacke grapes; but that of the white grapes, is likewise white. The juice of Figs toward the head or neck of the fruit, is white like milke; but of another color in all the bodie besides. In Apples, it is in manner of a froth or some in Peaches, of no colour; and yet the Duracina of that kind, be full of liquor, but who was euer able to say, what colour it was of?

The odor and sauor likewise of fruits, is as strange and admirable: for the smell of Apples is sharpe and piercing; of Peaches, weake and waterish. As for sweet fruits, they haue none at all: D for verily we see, that sweet wines likwise haue little or no smell, wheras the small and thin are more odoriferous: and all things in like manner of a subtill substance, do affect the nosthrills more, than the thicke and grosser doe: for what soeuer is sweet in sent, is not by and by pleasant and delicate in taft; for sent and smacke are not alwaies of like sort: which is the reason that Pomecitrons haue a most piercing and quick sauor, wheras in rellish they are rough and harsh: and so it fares in some sort with Quinces. As for Figs, they haue not any odor. And thus much may suffice in generall, for the sundrie kinds and sorts of fruits which are to be eaten, it remaineth now to search more narrowly into their nature.

To begin then with those that are enclosed within cods or husks: ye shal haue some of these cods to be sweet, and the fruit or seed contained within, bitter, and contrariwise, many of those E graines or seeds are pleasant and toothsome enough; but eaten with the huskes, they be starke naught and loathsome.

As touching berries, there be that haue their stone or wooddie substance within, and the fleshy pulp without, as Oliues, and Cherries: and there be again, that within the said woody stone haue the carnositie of the berry as some fruits in Ægypt, whereof we haue alreadie written. As for berries carnous without-forth, & pulpous fruit called Apples, they be of one nature. Some haue their meat within, & their woodie substance without, as nuts: others, their carnosity without, and their stone within, as Peaches and Plums. So that in them we may say, That the faultie superfluity is enuironed with the good fruit, wheras fruit otherwise is ordinarily defended by the said imperfection of the shell. Walnuts and Filberds are enclosed with a shell: Chestnuts F be contained vnder a tough rind, that must be pulled off before they be eaten; wheras in Medlars, the carnositie and it be eaten together. Acornes, and all sorts of mast, be clad with a cruft; Grapes with a skin, Pomegranats with a rind and a thin pannicle or skin besides. Mulberies do consist of a fleshy substance and a liquor. Cherries, of a skin and a liquid juice. Some fruits there be, the substance whereof will soon part from their woodie shell without, or stone within,

as nuts and Dates: others sticke close and fast thereto, as Oliues and Bay berries. And there be againe that participate the nature of both, as Peaches: for in those that be called Duracina, the carnous substance cleaueth hard to the stone, so as it cannot be plucked from it, wheras in the rest, it commeth easily away. Now ye shall meet with some fruits, that neither without in shell, nor within-forth in kernell, haue any of this woodinesse, as a kind of Dates [named Spadones.] And there be againe whose very kernell and wood is taken for the fruit it selfe, and so vsed; as a kind of Almonds, which (as we said) doe grow in Ægypt. Moreouer, yee shall haue a kind of fruits furnished with a double superfluity of excrement to couer them without-forth, as Chestnuts, Almonds, and Walnuts. Some fruits haue a substance of a threefold nature, to wit a bodie without; then, a stone or wood vnder it; and within the same, a kernell or seed, as Peaches. Some fruits grow thick and clustred together vpon the tree, as Grapes, and likewise Seruises, which clasp about the branches and boughes, bearing and weighing them downe as well as grapes. Others for it, hang here and there very thin, as Peaches. And there be againe that lye close, contained (as it were) within a wombe or matrice, as the kernells of the Pomegranates. Some hang by smal steles or tailes, as Peares: others in bunches, as Grapes and Dates. Ye shall haue some fruit grow by clusters, and yet hang by a long taile, as the Berries of Iuie and Elder: and others againe cleaue fast to the branch of the tree, as Bay berries: some both waies, as Oliues, for there bee of them that haue long steles, and others againe short-tailed. Some fruits there be also, that are formed like cups or mazers, as Pomegranats, Medlars, the Egyptian bean or Lote, and that which groweth about the riuer Euphrates.

As for the singularities and commendable parts in fruits, they be of diuers sorts, Dates are most set by for their fleshie substance, and yet they of Thebes aboue in high Ægypt, are esteemed onely for their outward coat or cruft that they haue. Grapes, and the Dates called Caryotæ, are in great account and estimation for their iuice and liquor: Peares and Apples be most accepted for their callous substance next vnto their skin or paring; but the honey-apples Melimela, are liked for their carnositie and fleshie pulpe within: Mulberies content the taft with their griftle or cartilage substance: and the best part of the nut, is the very graine of the kernel. In Ægypt, some fruits are regarded only for their vtmost skin, as drie Figs: when Figges bee green, the same is pilled off and cast aside like a shell; but be they once drie, the said skin is passing good. In all kind of Papyr-reeds, Ferula plants, and the white thistle Bedegnar, the verie maine stemme is the fruit to be eaten. The shoots also and tender sprigs of the Frg-tree, are reputed for good meat, and also medicinable. To come vnto the shrubs kind, the fruit of Capres is eaten together with the stalke. As for Carobe, what is it else but a meere woodie substance that folke do eat? (and yet the seed and graines within them, are not altogether to be despised for the propertie that they haue) although to speak precisely, it cannot properly be called either flesh, wood, or griftle; neither hath it found any other conuenient name to be termed by.

Chap. XXIX.

¶ *Of the Myrtle, eleuen kinds thereof.*

NAture hath shewed her wonderfull power and bounty, especially in the iuice of the Myrtle, considering that of all fruits, it alone doth yeeld two sorts both of oile and wine: likewise the mixture or composition called Myrtidanum, as we haue said before. Also there was another vse in old time of Myrtle berries: for, before that Pepper was found and vsed as it is, they serued in stead thereof: from whence tooke name that exquisite and daintie dish of meat, which euen at this daie is called Myrtatum. And hereof came that excellent sauce so highly commended for the brawne of the wild Bore, when for the most part Myrtle berries are put thereto to dip the meat therein, for to giue a better taft to that kind of venison.

As for the very tree it selfe, the first that euer was seen within the compasse and precincts of Europe (which beginneth at the mountaine Ceraunia) was about Circeij, where stood the tombe sometimes of *Elpenor*; and still it retains the Greeke name: whereby we may well judge, that it is a stranger. Howbeit there grew a Myrtle tree in old time, when Rome was first founded, euen in that plot of ground where the citie now standeth. For thus goeth the historie: That vpon a time the Romanes and Sabines being raunged in battaile array, and at the point to

A to fight a field, and to try the quarell (for the wrong which the Sabines pretended, was done to them, in regard that the Romans had rauished their daughters being yong maidens) were reconciled and made friends: and thereupon laid downe their armes and weapons, and were there purified with the sacred branches of Myrtle, in that very place wherein now the temple & image of *Venus Cluacina* standeth: which therupon tooke the name (for that *Cluere* in old Latin, signified to purge or clense.) Besides, that tree otherwise doth affoord a kind of sweet perfume to be burned. Now was this tree chosen for that purpose then to make attonement and to ratifie the mariage betweene the Romans and the Sabine Virgins, because *Venus* is the president and mother of carnall copulation, and the patronesse withall of the Myrtle tree. I will not confidently auouch, but me thinks I may presume to say, that the Myrtle was of all other trees first planted
B in the publick places of Rome for some memorable presage and fore-tokening of future euents and things to come. For whereas the temple of *Quirinus* (*i.* of K. *Romulus*) is reputed for one of the most antique buildings now extant, there grew euen before it for a long time two old and sacred Myrtle trees: the one named Patritia (*i.* the Myrtle of the Nobility:) and the other Plebeia; that is to say, the Myrtle of the Comminalty. The Patritian prospered and flourished many yeares together, whiles the Plebeian began to fade and wither. And to say a truth, so long as the Senate was able to maintaine and vphold their authority, the Myrtle of the Nobles continued fresh and greene, and spread her boughes at large; whereas that other of the Commons seemed as it had beene blasted, dried, and halfe dead: but after that the state of the Senat began
C to quaile and droupe (which was about the time of the war with the Marsyans) as their tree decaied and wasted, so the Plebeians Myrtle held vp the head againe: and so by little and little, as the Maiesty of the Senatours was taken downe and abated to nothing, so their Myrtle waxed poore and barren vntill it became dry and stark dead. Moreouer, there stood an old chappel and an altar consecrated to *Venus Myrtea*, whom now at this day they call Murtia.

Cato in his time wrote of three kinds of Myrtle: to wit, the white, the blacke, and the Conjugula (so called haply of wedlock or mariage:) & peraduenture it may come of the race of those Myrtles belonging to *Venus Cloacina* aboue named. Howbeit, in these daies wee distinguish our Myrtles otherwise; for some we repute wild and sauage, others tame and gentle: and these both are likewise of two sorts, to wit, either broader or narrower leaued. To the wilde kind properly belongeth the prickie Myrtle Oximyrsine. As for the tame and gentle Myrtles, they be those
D that are planted in short-yards and gardens, wherewith gardeners make arbours, knots, and diuers deuises. Whereof be sundry kindes. The Tarentine with small leaues; ours of Italy with broader; and the Myrtle * Hexastica, which is very ful of leaues, and ordinarily each branch hath six rankes thereof. But these are altogether out of request: both the other are full of boughes and branches. As touching the aboue named Conjugula, I suppose it be the same that our common Myrtle here in Italy. But the most odoriferous Myrtle of all others, is that which groweth in Ægypt.

* not Exotica, *Turneb.*

Now concerning the wine of Myrtles, *Cato* hath shewed vs the manner how to make it: namely, to take the black Myrtle berries, to dry them in the shade vntill they haue lost all their waterish humidity, & so to put them in Must or new wine, & let them lie there infused, or in steep.
E For certainly, if the berries be not dried before, they would yeeld an oile from them. Howbeit, afterward there was a deuise found out to make a white wine of the white Myrtle in this maner. Take of Myrtles wel beaten or stamped, the quantity of two * Sextares, steep the same in three hemires or pintes of wine, and then straine and presse forth the liquor.

* i. wine quarts

Moreouer, the very leaues of the Myrtle tree, being dried and reduced into a kinde of meale, are singular good for to cure the vlcers in mens bodies: for certaine it is, that this powder doth gently eat away and consume the superfluous humours that cause putrifaction. And besides, it serueth well to coole and represse immoderate sweats. Ouer and besides, the Oile also of Myrtles (a strange and wonderfull thing to tell) hath a certaine rellish and taste of wine: and withall, the fat liquor thereof is indued with a speciall and principall vertue to correct and clarifie Wines; if the bagges and strainers where-through the wine runneth, bee first sooked and
F drenched therewith: for the said oleous substance retaineth and keepeth with it all the lees and dregges, and suffereth nothing but the pure and cleare liquour to passe through, and more than that, it carrieth with it the commendable odour and principall vertue of the said oile. Furthermore, it is said, That if a way-faring man that hath a great journey for to goe on foot, carrie

in

in his hand a ſticke or rod of the Myrtle tree, he ſhall neuer be weary, nor thinke his way long G
and tedious. Alſo *rings made of Myrtle twigs, without any edged iron toole, keep downe and
cure the ſwelling bunch that riſeth in the groine. What ſhould I ſay more? The myrtle inter-
medleth in war affaires: for *Poſthumius Tubertus*, being Conſull of Rome (who was the firſt that
entred in a petty triumph, ouant into the city, becauſe he had eaſily conquered the Sabines,
and drawne in manner no bloud of them) rode triumphant in this manner, to wit, crowned with
a chaplet of Myrtle, dedicated to *Venus Victoreſſe*; and from that time forward the Sabines (euen
his very enemies) ſet much ſtore by that tree, and held it in great reuerence. And euer after, they
that went but ouant into the city after a victory, ware this kind of garland only, except *M. Craſſus*, who after he had vanquiſhed the fugitiue ſlaues, and defeated *Spartacus*, marched in a coro-
net of Lawrel. *Maſſurius* writeth, how Generals when they entred triumphant into Rome, riding H
in their ſtately chariots (which was the greateſt honor of all others) ware vpon their heads, cha-
plets of Myrtle. *L. Piſo* reporteth, That *Papyrius Maſſo* (who firſt triumphed in mount Albanus
ouer the Corſians) vſed euer after to come vnto the games Circenſes, and to behold them, crow-
ned with a garland of myrtle. This *Papyrius* was grandfather by the mothers ſide, to the ſecond
Scipio Africanus. Finally, *M. Valerius*, according to a vow that he made in his triumphs, vſed to
weare coronets as well of Lawrell as Myrtle.

* *Virgei annuli* But *Turnebus* readeth *Virgæ Jaculi*, i. ſtaues or Iauelines made of their ſtreit boughs. And *Experſes ferri*, i. notched with yron.

Chap. XXX.

¶ *Of the Lawrell or Bay tree, thirteene kinds thereof.*

LAwrel is appropriate vnto triumphs, and beſides groweth moſt pleaſantly before the gates I
of the Emperors court, and biſhops pallace; giuing attendance there as a dutifull portreſſe
or huiſſer, moſt decently. This tree alone both adorneth their ſtately houſes, & alſo keepes
watch and ward duly at the dores. *Cato* ſetteth down two kinds of Lawrel, to wit, the Delphick,
and the Cyprian. Hereunto *Pompeius Lenæus* hath ioined a third, which he called Muſtacea; be-
cauſe in old time they vſed to lay the leaues therof vnder certain cakes or March-panes (which
in thoſe daies they called Muſtacea) as they were in baking: this third kind hath leaues of all o-
thers largeſt, flaggy, hanging, and whitiſh withall. As for the Delphick, it carieth leaues of one
entire colour, greener than the reſt: the baies or berries thereof likewiſe are biggeſt, and of a red-
diſh green colour. With this Lawrell were they wont to be crowned at Delphos, who won the J
priſe at any tourney or ſolemne game; as alſo the victorious captains who triumphed in Rome. K
The Cyprian Lawrell hath a ſhort leafe, black, criſped, or curled, and about the ſides or edges
thereof it turneth vp hollow like a gutter or creſt-tile. Howbeit, afterwards there were ranged in
the rank of Lawrels other trees, to wit, the Tinus, which ſome take to be the wild Lawrel, others
ſay it is a kind of tree by it ſelf: indeed, it differeth from other Lawrels in the colour of the fruit;
for it beareth blew berries. Then came the roiall Lawrel in place, which began to be called Au-
guſta or Imperial. This is a very tal and big tree, with leaues alſo as large in proportion, and the
Baies or berries that it beareth are nothing ſharp biting and vnpleaſant in taſt. But ſome there
be that think this roiall Bay, is not a Lawrel, but a ſeuerall tree apart, as hauing longer & broa-
der leaues than the reſt of the ordinary ſort. And theſe writers ſpeaking of other kinds, call our
common Bay tree, Baccalia, and namely that which is ſo fruitful and beareth ſuch a ſort of ber- L
ries: as for the fruitleſſe and barren of that ſort they name Triumphal, which is, as they ſay, vſed
in triumphs. Whereat I maruell very much, vnleſſe this ordinance and cuſtom began of *Auguſtus Cæſar*, by occaſion of that Lawrell which came to him as ſent from heauen: (as I wil ſhew a-
non more at large;) and of all others it is for height loweſt, in leaf ſhort and frizled, very geaſon
and hard to be found. Now there is another kind of Lawrell named Taxa, very fit for greene ar-
bors, and to be wrought into knots. Out of the middeſt of the leafe there growes forth another
little one, in manner of a skirt, tongue, or lappet of the leafe. Alſo without any ſuch excreſſence
there is that, which they name Spadonia, as one would ſay, the guelded Bay, that cares not how
ſhadowie the place be where it grows: for be it neuer ſo remote out of the Sun, or ouerſhadow-
ed how ſoeuer, yet it ceaſes not to grow & ouerſpread the ground where it ſtandeth. Moreouer, M
in this rank is to be reckoned the wild ſhrub called Lowrier or Chamædaphne. There is beſides
the Lawrell Alexandrina, which ſome call Idæa, [i. Mountaine Lawrel] others Hyppoglottion,
[i. Horſe tongue] ſome Daphnitis, others Carpophyllon or Hypelate. This plant putteth forth
branches

A branches immediatly from the root, of a ſpan or nine inches long: very proper and handſom to
draw workes, or to clad arbors withall in a garden, alſo to make garlands and chaplets. The
leaues are more ſharp and pointed, ſofter alſo and whiter than thoſe of the Myrtle, yea, & haue
within them a bigger grain or ſeed, of colour red. Great plenty therof groweth vpon the moun-
taine Ida, likewiſe about Heraclea in Pontus: and in one word, neuer but in hilly and mountain
countries.

As for the herb Daphnoeides or Laureola, it hath many names: for ſome terme it Pelaſgum,
others Eupetalon, and there are again who would haue it to be Stephanos Alexandri (*i. Alex-
anders* chaplet.) This plant alſo is full of branches, carrying a thicker and ſofter leafe than the
common Lawrell: and if a man taſt therof, it will ſet both the mouth & alſo the throat on a fire:
B the beries that it beareth be blackiſh, inclining to a kind of red. It hath bin noted and obſerued
in antient writers, that no kind of Lawrel in old time was to be found in the Iſland Corſica: and
yet in theſe daies it is there planted, and thriueth well enough. The Lawrell betokeneth peace:
inſomuch, as if a branch therof be held out among armed enemies, it is a ſigne of quietnes and
ceſſation from armes. Moreouer, the Romans were wont to ſend their miſſiue letters adorned
with Lawrell, when they would giue aduertiſement of ſome ſpecial good newes or ioiful victo-
ry: they vſed beſides to garniſh therewith their lances, pikes, and ſpears. The knitches alſo and
bunches of rods, born before grand captains and generals of the army, were beautified & ſet out
with Bay branches. Herewith they ſtick and bedecke the boſome of that moſt great and gra-
cious *Iupiter*, ſo often as there commeth glad tidings of ſome late & freſh victory. And all this
C honor is don to the Lawrell, not becauſe it is alwaies green, nor for that it pretendeth and ſhew-
eth peace (for in both theſe reſpects the oliue is to be preferred before it) but in this regard, that
the faireſt and goodlieſt of them grow vpon the mountain Pernaſſus: and therefore Iaſon is it ſo
acceptable to *Apollo*, for which cauſe (as may appeare by *L. Brutus*) the Roman kings in old time
were accuſtomed to ſend great preſents and oblations thither to the temple of *Apollo*: or perad-
uenture it was in memoriall of that ground that bare Lawrell trees, and which according to the
Oracle of *Apollo*, the ſaid *L. Brutus* kiſſed, when he intended the publicke freedom of the city,
and minded to deliuer it from the yoke and ſeruitude of the kings: or haply, becauſe it alone ei-
ther ſet with the hand before the dores, or brought into the houſe, is not blaſted and ſmitten
with lightning. And theſe reaſons verily induce me to beleeue, that in times paſt they choſe the
D Bay tree for their triumphs, before any other: rather than as *Maſſurius* would haue it, becauſe
the Lawrell ſerued for a ſolemne perfume, to expiate and aſſoile the carnage and execution don
vpon the enemies. And ſo far were men in old time from common vſing either Lawrell or oliue,
and polluting the ſame in any prophane vſe, that they could not be permitted to burne thereof
vpon their altars when they ſacrificed or offered Incenſe, although it were to doe honour to the
gods, and to appeaſe their wrath and indignation. Euident it is, that the Bay tree leaues, by their
crackling that they make in the fire, do put it from them, and ſeem to deteſt and abhor it. It cu-
reth moreouer the diſeaſes of the guts [the matrice and the bladder] alſo the laſſitude and wea-
rineſſe of the ſinews. It is reported, that *Tiberius Cæſar* the Emperor vſed euer to weare a chaplet
thereof when it thundered, for feare of being ſtrucken with lightening.
E Moreouer, certaine ſtrange and memorable euents as touching the Bay tree, haue happened
about *Auguſtus Cæſar*. For *Liuia Druſilla* (who afterwards by mariage with the ſaid *Auguſtus*, be-
came Empreſſe, and was honored with the title of *Auguſta*) at what time as ſhe was affianced
and eſpouſed to *Cæſar*, chanced as ſhe ſat ſtill, to haue an exceeding white hen to light into her
lap (which an Ægle flying aloft, let fall from on high) without any harme at all to the ſaid pul-
let. Now when this lady or princeſſe aduiſed & conſidered wel the hen, without being aſtonied
and amazed at ſo ſtrange & miraculous a ſight, ſhe perceiued that the hen held in her bill a law-
rell branch full of Bay berries. The Wiſards and Soothſaiers were conſulted withall about this
wonderful occurrent, and gaue aduiſe in the end to preſerue the bird and the brood therof: like-
wiſe to ſet in the ground the foreſaid branch, and duly to tend and look vnto it. Both the one
F and the other was done and excecuted accordingly, about a certain houſe in the country belon-
ging to the *Cæſars*, ſeated vpon the riuer Tyberis, neere the cauſey or port way Flaminia, about
nine miles from Rome: which houſe therupon was called, Ad Gallinas, as a man would ſay, The
ſigne of the Hens. Well, the foreſaid branch mightily proſpered, and proued afterwards to be a
groue of Laurels, which all came from the firſt ſtock. In proceſſe of time, *Auguſtus Cæſar* when
he

he entred in Triumph into Rome, caried in his hand a branch of that Bay tree, yea, and wore a chaplet vpon his head of the same: and so did all the Emperors and *Cæsars* his succeſſors after him. Hereof also came the custome to set againe and replant those branches of Lawrel that emperors held in their hands when they triumphed; & therof continue whole woods & groues distinguished each one by their seuerall names, and perhaps therefore were they named Triumphall. This is the only tree known in the Latine tongue, whereof a man beareth the name. Againe, there is not another tree besides that hath the leafe to cary in the Latine tongue a denomination and name by it selfe apart, as well as the tree: for whereas the plant is named Laurus, the leafe we call Laurea. Moreouer, there is a place likewise within the city of Rome on mount Aventine, retaining still the name Loretum, which first was imposed vpon it by reason of a lawrell groue which grew there. The Bay tree also is vsed in solemne purifications before the gods: and to conclude, this would be resolued and agreed vpon by the way, That if a branch therof be set, it will prosper and become a tree; although *Democritus* and *Theophrastus* make some doubt thereof. Thus much of Lawrels and other domesticall and natiue trees: it remaineth now to write of those that be wild and sauage, and of their natures.

THE SIXTEENTH BOOKE OF THE HISTORIE OF NATVRE, WRITTEN BY C. PLINIVS SECVNDVS.

The Proeme.

HItherto haue we treated of those Trees that beare Apples and such like fruits: which likewise with their mild iuice and sweet liquors made our meats first delightsome, and taught vs to mingle together with the necessarie food for sustentation of our liues, that which maketh it delicate and pleasant to content our taste: as well those trees that naturally were so in the beginning, as those which through the industry and skill of man, what by graffing and what by wedding them (as it were) to others, became toothsome, and delectable to our tongue: whereby also we haue gratified in some sort wild beasts, and done pleasure to the foules of the aire. It followeth now by order, that we should discourse likewise of trees that beare Mast, those trees (I say) which ministred the first food vnto our forefathers, and were the nources that fed and cherished mankind in that rude wild age and poore infancie of the world: but that I am forced to break the course of mine history, and preuented with a deep study and admiration arising from the truth and ground of experience, to consider, What maner of life it might be, to liue without any trees or shrubs at all growing out of the earth.

Chap. I.

¶ *Of Nations that haue no Trees nor Plants among them. Of wonderfull trees in the Northerly regions.*

WEe haue shewed heretofore, that in the East parts verily toward the maine Ocean, there be many countries in that estate, to wit, altogether destitute of trees. In the North also I my selfe haue seene the people called * Cauchi, as well the greater as the lesse (for so they be distinguished) where there is no shew or mention at all of any tree whatsoeuer. For a mightie great compasse, their Country lieth so vnder the Ocean, and

* i. The Low-countries of Zeland, &c.

and subiect to the tide, that twice in a day & night by turns, the sea ouer floweth a mighty deale of ground when it is floud, and leaues all dry again at the ebbe & return of the water: insomuch, as a man can hardly tell what to make of the outward face of the earth in those parts, so doubtfull it is between sea and land. The poore silly people that inhabit those parts, either keep together on such high hils as Nature hath afforded here and there in the plain: or els raise mounts with their own labor and handy work (like to Tribunals cast vp and reared with turf, in a camp) aboue the height of the sea, at any spring tide when the floud is highest; and thereupon they set their cabbins and cottages. Thus dwelling as they do, they seeme (when it is high water, & that all the plain is ouerspread with the sea round about) as if they were in little barks floting in the midst of the sea: againe, at a low water when the sea is gone, looke vpon them, you would take them for such as had suffered shipwracke, hauing their vessels cast away, and left lying a-co-side amid the sands: for ye shall see the poore wretches fishing about their cottages, and following after the fishes as they go away with the water: they haue not a four-footed beast among them, neither inioy they any benefit of milk, as their neighbour nations do: nay, they are destitute of all means to chase wild beasts, and hunt for venison; in as much as there is neither tree nor bush to giue them harbor, nor any neare vnto them by a great way. Sea-weeds or Reike, rushes and reeds growing vpon the washes and meers, serue them to twist for cords to make their fishing nets with. These poore souls and silly creatures are faine to gather a slimy kinde of fatty mud or oase, with their very hands, which they drie against the wind rather than the Sun: and with that earth, for want of other fuell, they make fire to seeth their meat (such as it is) and heat the inward parts of their body, ready to be starke and stiffe againe with the chilling North winde. No other drink haue they but rain water, which they saue in certain ditches after a shower, and those they dig at the very entry of their cottages. And yet see! this people (ss wretched and miserable a case as they be in) if they were subdued at this day by the people of Rome, would say (and none sooner than they) that they liued in slauerie. But true it is, that Fortune spareth many men, to let them liue still in paine and misery. Thus much as touching want of woods and trees.

On the other side, as wonderfull it is to see the mighty forrests at hand thereby, which ouerspread all the rest of Germany: and are so big, that they yeeld both cooling and shade to the whole countrey: yea, the very tallest woods of all the rest are a little way vp higher in the countrey, and not farre from the Cauchi aboue said: and especially those that grow about the two great loughes or lakes in that tract. Vpon the banks wherof, as also vpon the sea-coasts, there are to be seene thick rows of big Okes, that loue their seat passing wel, and thriue vpon it in growth exceeding much: which trees happening to be either vndermined by the waues and billowes of the sea vnder them, eating within their roots, or chased with tempestuous winds beating from aboue, carry away with them into the sea (in manner of Islands) a great part of the Continent, which their roots doe claspe and embrace: wherewith being counterpoised and ballaised, they stand vpright, floting and making saile (as it were) amid the waues, by the means of their mighty armes which serue in stead of tackling. And many a time verily, such Okes haue frighted our fleets and armadoes at sea, and especially in the night season, when as they seemed to come directly against their proes standing at anker, as if of purpose they were driuen vpon them by the waues of the sea: insomuch, as the sailers & passengers within, hauing no other means to escape them, were put to their shifts, and forced for to addresse themselues, and range a nauall battell in order, and all against trees, as their very enemies.

Chap. II.

¶ *Of the huge and great Forest Hercynia.*

IN the same North climat is the mighty forrest Hercynia. A huge and large wood this is, stored with tall and big Okes, that neuer to this day were topt or lopt. It is supposed they haue been euer since the creation of the world, and (in regard of their eternall immortality) surmounting all miracles besides whatsoeuer. And to let passe all other reports which happely would be thought incredible, this is knowne for certain, That the roots of the trees there, run and spread so far within the ground, that they encounter and meet one another: in which resistance they swell and rise vpward, yea, and raise vp mounts of earth with them to a good height in

in many places: or, where as the earth followes not, a man shal see the bare roots embowed archwise, and mounting aloft as high as the very boughes: which roots are so interlaced, or els rub one against the other, striuing (as it were) not to giue place, that they make a shew of great portailes or gates standing open so wide, that a whole troupe or squadron of horsmen may ride vpright vnder them in ordinance of battell.

Chap. III.

¶ *Of trees bearing Mast.*

MAst tres they were all, for the most part, which the Romanes euer so highly honoured and held in best account.

Chap. IV.

¶ *Of the Ciuicke garland: and who were honoured with chaplets of Tree-leaues.*

FRom Mast trees (and the Oke especially) came the Ciuicke coronets. And in very truth, these were the most honorable badges and ornaments that could possibly be giuen vnto souldiers and men of war, in regard of their vertue and man-hood: yea, and now for a good while, our Emperors haue had this chaplet granted vnto them, in token and testimony of clemency: euer since that by our prophane and vnkind ciuill wars the world is grown to this passe, that it is reputed a singular demerit and gracious act, not to kill a citizen of Rome, but to let him liue. To this kind of garland, none other be comparable: for the Murall and Vallare coronets (bestowed vpon them that either skaled the walls, or entred the breach first into an enemy city, or els mounted ouer the rampier of a camp) albeit they were of gold, and of greater price by far, yet they gaue place to these. Yea, the very Nauall coronets, fashioned like the three forked pikes of ship beake-heads (wherewith they were honored, who had performed some braue seruice at sea) came behind these Ciuicke garlands, due to them who haue rescued citizens and saued them out of the enemies hands: and yet in these our daies there haue bin knowne two in that kind most renowned aboue the rest; whereof the one was bestowed vpon. *M. Varro* by *Pompey* the Great, for defeating the pyrats, and for scouring and clearing the seas of them: the other likewise giuen to *M. Agrippa*, by [*Augustus*] *Cæsar*, for vanquishing the Sicilians, who also were no better than rouers.

Now forasmuch as we are light vpon the mention of Naual or Rostrate coronets, this would be noted, That in old time the said brasen beake-heads of ships woon from the enemies, and set vpon the front of the Tribunall or publick pulpit in Rome, serued for an ornament to beautifie the Forum or common place of the city; so as the very body of the people of Rome seemed to be crowned and honored thereby. But after that the Tribunes in making seditious orations began to stamp and fare like mad men there, to trample (I say) vnder foot, and to pollute that sacred place and those goodly ensignes; after that they fel once euery man to make his priuat and particular profit of the common good, without regard to aduance the weale publick; after that each one sought to strengthen and arm himself by the benefit of authority, and that to the weakening of the main state, insomuch as they who were reputed by their place sacrosanct and inviolable, polluted and prophaned all: then the said ornaments of beak-heads, which beautified the place vnder their feet, serued to adorne the heads of Roman citizens. So as, to returne again now to the aboue named *Agrippa*, *Augustus Cæsar* gaue vnto him a Nauall coronet for subduing the Sicilian Pyrats: and himselfe receiued of mankind a Ciuick chaplet, for sparing the bloud, and sauing the liues of so many citizens.

In antient time they vsed to crowne none but the gods. And hereupon it is, that the Poet *Homer* speaketh of no garlands and chaplets but due to the celestiall & heauenly wights, or at leastwise in the name of a whole army, for victory atchieued in some notable battell: for to one man alone he alloweth not any, no not in regard of the better hand in combate or single fight. And to say a truth, the first that euer set a Garland vpon his owne head, was prince *Bacchus*, and the same was made of Iuie: but afterwards, those that sacrificed to the honour of gods, not only ware chaplets themselues, but also adorned therwith the heads of the very beasts which were appointed to be killed for sacrifice. In the end, the custome was taken vp to honour them with gar-

garlands, wherewith prizes at those sacred and solemne games, Olympia, Isthmia, Pythia, and Nemea. Howbeit the manner was then, and so continueth to this day, To giue chaplets to the said victors, not in their own name, but in the behalfe of their natiue country, which by open proclamation they pronounce to be crowned and honored thereby. And hereof it came also, that such coronets and chaplets were granted to them that should triumph, yea and soone after to those also who had won the prise in any publick games, vpon condition to dedicate them to the temple of the gods.

To discourse what Roman citizen receiued this honor first of a chaplet or coronet, were a long peece of worke, and nothing pertinent to our purpose and matter in hand; considering that they were acquainted with none at all, but in regard of seruice performed in the wars. Yet thus much I may auer for certain, That no nation vnder heauen, nay put them all together, can shew so many sorts of chaplets and coronets, as this one state and people of Rome. K. *Romulus* crowned *Hostus Hostilius* with a garland of bare greene leaues, for that in the forcing and ruining of Fidena, he brake first into the city and made way for the rest. This man was grandsire to *Tullus Hostilius* king of Rome. Semblably in the war against the Samnites, wherein *Cornelius Cossus* the Consull was L. Generall, the whole army crowned *P. Decius* the father with a chaplet of green leaues, who then was a martiall Tribune or Colonell ouer a regiment of souldiers, for that hee had saued and deliuered the said army.

But now to come againe to our Ciuicke garland, it was made at first of the Ilex or Holme tree leaues: afterwards men tooke a better liking to make it of the Æsculus, a tree consecrated to *Iupiter*. They staied not there, but changed soone after with the common oke; neither made they any precise choise, but tooke the leaues of that which came next hand, wheresoeuer they found it growing; prouided alwaies that it bare acorns: for all the honor of these garlands consisted principally in the mast. Moreouer, there belong to these Ciuick garlands streight laws and ordinances, in which regard these chaplets be proud and stately: and we may be bold to compare them with that Paragon-coronet of the Greeks, which passeth al others, giuen solemnly and published in the presence of *Iupiter*, and made of the wilde Oliue dedicated vnto him: comparable (I say) to any crowne or chaplet whatsoeuer; euen to that, for which a city in token of ioy, would not stick to lay open a * breach in their very wall to receiue it when it should enter in. The lawes ordained in this behalfe run in this forme: *Inprimis, He that is to enioy the honour of a Ciuicke chaplet, ought, first to haue rescued a citizen, and withall to kill the enemie in whose danger hee was. Item, It is required, That the enemies the same day held the verie ground and were Masters hereof, wherein the rescue was made and the seruice performed. Item, That the partie himselfe so saued, doe confesse the thing, for otherwise all the witnesses in the World auaile not in this case. Item, the man thus deliuered, must bee a free Citizen of Rome in anie hand: for set case that hee were a King which was thus rescued, if hee were a stranger, and came onely amongst the auxiliaries to aide the Romanes, it would not boot, nor gaine any man this honour for to saue his life. Item, Say that the Generall himselfe were rescued and deliuered out of danger, the partie for his good seruice should haue no more honour done vnto him, than if hee had preserued but a simple common souldier, so hee were a Romane Citizen: for the makers of these ordinances aimed chiefely at the life of a Citizen whosoeuer hee was, without regard of any other circumstance. Item, Hee that was once crowned with this garland, was endued also with these priuiledges: That hee might weare it alwaies after, whensoeuer it pleased him: That so often as hee came in place of publicke playes or games, men should accustomably rise vp vnto him, yea, and the verie Senatours themselues, doe him honour in that sort: That hee should haue his place allowed him to sit next vnto those of Senatours degree: That both himselfe, and also his father and grandsire by the fathers side, should euer after bee exempt from all ciuile charges, and inioy full immunitie.* Thus much concerning the lawes and priuiledges attending vpon the Ciuicke garland. *Siccius Dentatus* (as wee haue specified before) receiued foureteene of these chaplets for his good seruice: [*Manlius*] *Capitolinus* six, and hee verily had one of them for rescuing *Seruilius* beeing Generall of the Armie. As for *Scipio Africanus*, hee refused this honour when it was offered and presented vnto him, for sauing the life of his owne father at the iourney and battaile of Trebia. O the excellent orders and customes of those times, worthie of immortalitie and euerlasting memorie! O the wisdome of men in those daies, who assigned no other reward for so braue exploits and singular workes, but honour onely? And whereas all other militarie coronets they enriched and adorned with gold, they would not set the life of a citizen at any price. A plaine and euident

* As the manner was to receiue the Hieronice.

profession of our ancestors and predecessors, That it is an vnlawfull and shameful thing to seem G
for to saue a mans life, in hope of any gaine and profit thereby.

Chap. V.

¶ *Of Mast, thirteene kinds.*

MAny nations there be euen at this day, and such as inioy peace and know not what warre meaneth, whose wealth and riches lyeth principally in Mast: yea and elswhere in time of dearth and for want of other graine, folke vse to dry their mast, grind it into meale, temper it with water, and thereof make dough for bread. Moreouer, euen at this day throughout Spaine, the manner is to serue vp acornes and mast to the table for a second seruice: and sweeter it is being rosted vnder the cinders and ashes, than otherwise. Ouer and besides, prouided it H
is by an expresse act and law of the twelue tables in Rome, that a man may gather the mast that falleth from his owne trees into another mans ground.

Diuers and sundry sorts there be of Mast, and their difference consisteth in the forme and fashion of the fruit, in the site and scituation of the place, in the sex, and in the taste: for the mast of the Beech tree is of one figure and making, the Acorne (which is the mast of the Oke) another; and the mast of the Holme or Ilex, differeth from them both: yea & in euery one of these kinds, they do vary one from another. Also, some are of trees growing wild; others more milde and gentle, louing places well tilled and ordered by husbandry. Some like the hilly countries, others the champaine and the plains. Semblably there is mast comming from the male trees: I
there is againe that groweth on the female. In like maner, the rellish & taste maketh a difference and diuersity in mast. The sweetest of all, is the Beech mast: for *Cornelius Alexander* reporteth, That the inhabitants of Chios, when they were streightly beleaguered, indured the siege a long time by the benefit & substance only of that mast. We are not able distinctly to specifie name by name, the sundry sorts of mast and the trees which beare the same, considering that in euery countrey they alter their names: for we see the Robur and the Oke to grow commonly euerie where, but the Esculus is not so rife in all countries. A fourth sort there is of the same kind, that is not known ordinarily in most places of Italy. We will therefore distinguish them according to their nature and properties: yea and when need shall require, by their Greeke names also.

Chap. VI.

¶ *Of the Beech mast, and other Masts: of Charcole; and the feeding of Hogs.*

THe Beech mast is like to the kernell of a Chestnut, inclosed within a three cornered skin. The leafe of the tree is thin and very light, resembling that of the Poplar: it turneth yellow passing soone. In the middle whereof, for the most part, and in the vpper side, it bringeth forth a little green berrie, pointed sharpe at the toppe. The mast of Beech, Rats and Mice are much delighted in: mark therfore when there is store of that mast, ye shal haue as great increase of that vermin. It will feed also Reremice or Dormice fat: and the Ousels or Blackbirds take a great liking thereto, and wil flie vnto it. Lightly, all trees are most fruitful one yere than another, and beare most euery second yeare; but aboue all, Beeches keepe this course. As touching Mast (which properly is so called) it groweth vpon the Robur, the common Oke, the Esculus, Cerrus, Ilex, and Cork tree. All kinds of mast are contained more or lesse, within a rough cup, which lieth close to the vtmost skin thereof, & claspeth it about. The leaues of all these mast trees, except the mast-Holme Ilex, be heauy, fleshie, large, waued or indented along the sides, neither be they yellow when they fall, as the Beech leaues are; longer also or shorter, according to the diuers trees whereupon they grow.

Of the Ilex or mast-Holme tree, there be two sorts. Those in Italy differ not much in leafe from the Oliue. Some Greeks call them Smilaces, but in other prouinces Aquifoliæ. The mast of Ilex, both the one and the other, is shorter and slenderer than of the rest. *Homer* calleth it Acylon, by which name he distinguisheth it from other mast. The male Holmes (men say) beare no fruit. The best mast and the biggest, is the Acorn growing vpon the common Oke: next to it is that of the Esculus: as for that of the Robur, it is but small. The Cerrus carieth a mast vnpleasant to the eie, and rough to be handled, for clad it is with a cup beset with sharpe prickes like to

A to the Chestnut shell. Among the very Acornes, some haue a sweeter taste than others: the male Oke beareth those that be more soft and tender; the male, tough, thick, and massie: and the best simply are those that come of the broad leafed Oke, for so it is called by reason of the large leaues. Moreouer, there is another difference in mast and acornes, for some be bigger than others; againe, there are that haue thin and fine skins inclosing the kernel; and ye shal find others for them as thick skinned; likewise many of them are couered with a rough and rustie tunicle; and as many againe do shew immediatly their bare white skin and naked fleshy substance. Furthermore, that mast is accounted good, which at both ends (taking it long-waies) groweth hard in manner of a stone: howbeit that which hath an hard shell without, and a soft body within, is better than that which is hardened in the carnous substance of the body; and lightly neither of both these qualities happeneth to any but the male kind. Ouer and besides, some you shall find
B fashioned long like an egge, others as round as a ball; and a third sort sharp pointed. The outward colour also yeeldeth variety: for some be blacker than other, but the whiter commonly be the better set by. Some are bitter toward the ends, and sweet in the mids. The length also & the shortnesse of the stele or taile whereto they hang, maketh a difference. The very tree it self causeth diuersity of the fruit: for that Oke which beareth the biggest mast, is named Hemeris. A shorter tree this is than the rest, with a round head, and putting forth many hollow arm-pits (as it were) of boughes and branches. The wood or timber of the ordinary and common Oke is tougher and harder than that of others, and lesse subiect to putrifaction: ful of arms & boughes it is, as the other, but it groweth taller and is thicker in the body. The highest of all, is the Ægilops, which loueth to grow in wild and desart places. Next to it for talnesse, is the broad leafed
C Oke, but the timber therof is not so good and profitable for building, how soeuer it be imploied for to make charcole: yet being once squared to that purpose, & cleft, it is subiect to the worm, and will soon rot: and for this cause, being in quarters, they vse not to make cole of it clouen, but of the solid and round boughs or branches thereof. And yet this kind of charcole serueth only the Bloom-smithies and furnaces; the hammer-mills also of brasse and copper-smithes, whom it standeth in great good stead and saueth them much fewell; for it burneth and consumeth no longer than the bellowes goe: let them leaue blowing once, presently the cole dieth, and so it lasteth long: for at euery new blast it is renewed againe and refreshed: otherwise it sparkleth very much and yeeldeth many cinders. But the charcole made of yong trees is the better.
D Now the maner of making them is this: when the wood is cut into many clefts & splents, fresh and green, they are heaped vp on high, and hollow, in manner of a furnace or chimney, and then well luted with clay in the top, and all about: which done, the pile of truncheons aforesaid, is set on fire within; and as the outward coat or cruft of clay beginneth to wax hard, the workemen or colliers pierce it with poles and pearches, and make diuers holes therein for vent, and to let out the smokie vapor that doth sweat and breath from the wood. The worst of all other for timber or cole, is the oke named Haliphloeos; a thicke barke it hath, and as big a body, but for the most part hollow and light like a spunge or mushrom: and there is not another besides it of all these kind of trees, that rotteth as it stands aliue. Besides, so vnfortunate it is, that the lightning smiteth it, as low as it groweth; for none of them ariseth to any great height: which is the cause that it is not lawfull to vse the wood thereof about the burning of any sacrifice. Seldome beareth it
E any Acorns, and those few that it hath, be exceeding bitter, so as no other beast will touch them but swine again; nor they neither, but for pure hunger, when they can meet with no other food. Moreouer, in this regard also reiected it is, and not emploied in any religious vse, for that without blowing at the wood and cole thereof continually, it will not burne cleare and consume the sacrifice, but goeth out and lieth dead.

But to returne vnto our mast againe: that of the Beech tree feedeth swine quickely, maketh their flesh and lard faire and pleasant to the eie, tender to be soone sodden or rosted, light and easie of digestion, and good for the stomacke. The mast of the Holme causeth hogs to gather a more fast and compact flesh, their bodies to be neat, slender, lanke, and ponderous. Acornes doe engender a fleshy substance, more squiare and spreading, and the same also most heauy and hardest of digestion, and yet they are of all other kinds of mast, most sweet and pleasant. Next to them in goodnesse (by the testimony of *Nigidius*) is that of the tree Cerrus, neither is there bred of any other a courser flesh, howbeit hard it is, fast, and tough. As for the mast of Ilex, hogs are endangered by eating thereof, vnlesse it be giuen them warily by little and little. Hee sayth

moreouer, that of all other it falleth last. Moreouer, the mast of Esculus, Robur, and the Corke, G
causeth the flesh to be spungeous and hollow. To conclude, what trees soeuer beare mast, carry
also certaine nuts called Galls: and lightly they are full of mast but each other yeare. But the
oke Hemeris beareth the best gals, and fitteth for the curriors to dresse their leather. The broad
leafed Oke hath a kinde of Galls like vnto it, but lighter in substance, and not so good by far:
it carrieth also blacke galls (for 2 sorts there be) and this is better for the dier to colour wooll.

Chap. VII.

¶ *Of the Gall-nuts: and how many other things Mast-trees doe beare besides Mast.*

THe nuts called Galls, do euer breake out all at once in a night, and namely about the be- H
ginning of Iune, when the Sun is ready to goe out of the signe Gemini. The whiter sort
thereof commeth to the growth in one day: and if in the first spring and breaking foorth
thereof it be hot weather, it drieth and withereth out of hand, and commeth not to the full big-
nesse and perfection, namely to haue a kernell as much as a bean. The blacke of this kind conti-
nueth longer fresh and green, and groweth still, to the bignesse otherwhiles of an apple. The
best galls be those of Comagena: the worst is that of the oke called Robur, which are knowne
by the holes they haue, that may be seen through. The common oke Quercus, ouer and besides
the fruit (which is the mast) beareth many other things; for it carieth both sorts of gal, the black
and the white: certaine berries also like Mulberries, but that they be dry and hard, resembling I
for the most part a buls head, containing within them a fruit much like the kernels of the oliue.
Moreouer, there grow vpon it certain little bals not vnlike to nuts, hauing soft flox within good
to make candle-wick or matches for lamps; for burn they wil without any oile, like as the black
Gals. It beareth also other little pils or balls good for nothing, couered ouer with haire, & yet
in the spring time they yeeld a certain juice or liquor like hony. Furthermore, there breed in
the hollow arm-pits (as it were) of the boughes, other small pills setled or sticking close to the
wood, and not hanging by any steles, which toward the nauill or bottome thereof are whitish;
otherwise they be speckled all ouer with black spots, saue that in the mids between they are of
a scarlet red colour: open them, and hollow they are within, but very bitter. Somtimes also this
oke engendreth certain hard callosities, like Pumish stones, yea and other round balls made of
the leaues folded one within another: on the backeside also of the leafe where it is reddish, yee K
shal find sticking certain waterish pearls, white and transparent or cleare within, so long as they
be soft and tender, wherein there breed little flies or gnats: howbeit in the end they ripen and
wax harder, in manner of Galls.

Chap. VIII.

¶ *Of the Catkin called Cachrys: the graine of Scarlet: of Agaricke, and Corke.*

THe Oke called Robur, bringeth forth likewise a certaine pendant chat or catkin, named in
Greeke Cachrys: for so they terme the little pill, which is of a burning and caustick Na- L
ture, and whereof there is vse in Physick for potentiall cauteries. The like groweth vpon
Firres, Larch trees, Pitch trees, Lindens of Tillets, Nut-trees, and Planes, namely after that the
leaues be falne; and abideth vpon the tree in winter time. These chats haue a kernel within like
to those of the Pine-nuts. It beginneth to grow in winter, & by the spring time al of it openeth
and spreadeth to the proofe; but when the leaues begin to bud and put forth, it falleth off. Thus
you see how fruitfull these okes be, and how many things besides mast, they do bring forth: and
yet they cease not nor giue ouer thus, for many times a man shall see certaine excrescences
growing forth about their roots, such as toadstools & mushroms; the last deuises that our glut-
tons haue inuented to whet their appetite and stomacke, and to maintaine gourmandize. The
common Oke breedeth the best of this kind: as for those that grow about the Oke Robur, the M
Cypresse, and Pine-tree, they are hurtfull to be eaten, and venomous. Moreouer, *Hesiodus* saith,
that the Okes Robora do beare Misselto, and yeeld hony. True it is indeed, that the hony-dewes
called Manna, falling from heauen (whereof we haue spoken before) light not vpon any other
leaues

A leaues more than of those okes. Moreouer, this is known for certain, that the ashes of this Oke
when it is burnt, hath a quality or taste of nitre or salt-peter.

Howbeit for all the riches and fruit that the Oke affourdeth, the Scarlet grain alone which
commeth of the Ilex, challengeth yea and ouermatcheth it. This graine is no other than a very
excrement or superfluity arising about the stem of the small shrub called Ilex Aquifolia, scra-
ped and pared off from it, like such refuse as they Cusculium or Quisquilium: but of such price
it is, that the poore people of Spaine gather it, & make a good part of their reuenew thereby,
euen as much as will pay halfe their tribute. As touching the commendable vse thereof in dy-
ing, we haue sufficiently spoken in the discourse of the purple tincture. This scarlet grain is in-
gendred also in Galatia, Africa, Pisidia, and Cicilia. But the worst of all other is that which
B commeth out of Sardinia.

As for Agaricke, it groweth in France principally vpon trees that beare mast, in manner of a
white mushrom: of a sweet sauor, very effectuall in Physicke, and vsed in many Antidotes and
soueraigne confections. It groweth vpon the head and top of trees: it shineth in the night, and
by the light that it giueth in the darke, men know where and how to gather it.

Of all Mast-trees, the Oke called by the Greeks Ægylops, beare certaine drie excrescences
swelling out like Touch-wood, couered all ouer with a hoary & hairy mosse, and these not only
beare out from the bark of the fruit, but also hang downe from the boughes a cubit in length:
and odoriferous they are, as we haue shewed in our treatise of Ointments.

Now concerning Corke, the wooddy substance of the tree is very small, the mast as bad, hol-
C low, spungeous, and good for nothing. The barke only serueth for many purposes, which will
grow again when the tree is barked, & that of such a thicknes, that it will beare 10 foot square.
Much vse there is of it in ships, & namely for boys to ancre cables; also for flotes to trainels or
dragnets that fishers do occupy: moreouer in bungs & stoppels of barrels, bottles, and such like
vessels. Finally, our gentlewomen and dainty dames haue the soles of their pantofles & winter-
shooes vnderlaid therewith. In regard of which barke, the Greeks call it by a pretty name, and
not improperly, The bark tree, or the tree all barke. Howbeit some would haue it to be the fe-
male Ilex or Mast-Holm, and so they name it: and where there groweth no Ilex, in stead thereof
they take Corke, especially in Carpentry, and cart-wrights worke, as about Elis and Lacedæ-
D mon. Neither groweth it in all parts of Italy, ne yet in any one quarter of France.

Chap. IX.

¶ *What trees they be that carry barke good for any vse.*

THe peisants of the countrey and the rusticall people employ much, the barke also of Bee-
ches, Lindens or Tillets, Firs, and Pitch trees; for thereof they make sundry vessells, as
paniers, baskets, and certain broad and wide hampers for to carry their corn and grapes in
time of harueste and vintage, yea and otherwhiles they couer their cottages therewith. Moreo-
uer, spies vse to write in barks (when they be fresh and greene) intelligences to their captaines,
graning and drawing their letters so, as that the sap and iuice thereof coureth them. To con-
E clude, the bark of the Beech tree is vsed in certain religious ceremonies of sacrifice: but when
the tree is spoiled of the bark, it soone fadeth and dieth.

Chap. X.

¶ *Of Shindles: of the Pine tree, the wilde Pine, the Fir, Pitch tree, Larch tree, Torch tree, and the Yew.*

THe bourds or shindles of the wild Oke called Robur, be of all others simply the best: and
next to them, those which are made of other mast-trees, and especially of the Beech. The
shindles are most easily rent or clouen out of all those trees which yeeld Rosin, but setting
F aside the Pine-wood only, none of them are lasting. *Cornelius Nepos* writeth, that the houses in
Rome were no otherwise couered ouer head but with shindles, vntil the war with K. *Pyrrhus*, to
wit, for the space of 470 yeres after the foundation of the city: and of a truth, the chiefe quarters
of Rome were diuided & distinctly named by certain woods and groues neere adioining. And
euen at this day there remaineth the quarter of *Iupiter Fagutalis*, where sometime stood a tuft or

groue of Beeches: alſo the gate Querquetulana, bearing the name of an Oke row: likewiſe the G
hill Viminalis, from whence they vſed to fetch windings and bands of Oſiers: and many other
groues, whereof ſome were ſet double, and were two of a name. We reade in the Chronicles,
that *Q. Hortenſius*, Dictator for the time being, (when as the commons aroſe, and in that mutí-
nie or inſurrection forſooke the city and withdrew themſelues to the fort Ianiculum) made a
law & publiſhed it within a certain groue hard by, called Eſculetum, where there grew a num-
ber of trees named Eſculi: and the ſaid ſtatute ran in this forme, That whatſoeuer ordinance
ſhould be enacted by the ſaid Commonaltie, it ſhould bind all Citiſens of Rome whomſoeuer
to obſerue and keepe.

In thoſe daies the Pine and Fir, and generally all trees that yeeld pitch, were held for ſtran-
gers and aliens, becauſe none of them were knowne to grow neere vnto the city of Rome: wher- H
of now we will ſpeak, the rather becauſe the beginning & whole maner of confecting and pre-
ſeruing wines might be thereby throughly knowne. Firſt and formoſt, ſome of the trees afore-
ſaid in Aſia or in the Eaſt parts do bring forth pitch. In Europe there be ſix ſorts of trees, ſee-
ming all of one race, which yeeld the ſame. Of which, the Pine and the Pinaſter cary leaues thin
and ſlender in manner of haires, long alſo and ſharp pointed at the end. The Pine beareth leaſt
roſin of all others, howbeit otherwiſe ſome it hath in the very fruit thereof, which we call Pine
nuts or apples (wherof we haue already written) yet ſo little it is, that hardly a man would rec-
kon the Pine among thoſe kinde of trees that yeeld roſin. The Pinaſter is nothing els but the
wild Pine: it growes wonderful tall, putting forth arms from the mids of the trunk or body vp-
ward; wheras the other Pine brancheth only in the head. This of the twain is more plentifull I
in roſin, whereof we will ſpeake more anon. Theſe wild Pines grow alſo vpon plains. There be
trees vpon the coaſt of Italy, which men cal Tibuli, and many think they be the ſame, although
they carry another name: ſlender they are and ſhorter, altogether without knots, and little Roſin
they haue in them or none: but they ſerue well for ſhipwrights, to build frigats & brigandines.

The Pitch tree loueth the mountains and cold grounds, a deadly and mournful tree it is, for
they vſed in old time to ſticke vp a branch thereof at the dores of thoſe houſes where a dead
corps was, to giue knowledge therof abroad: and commonly it grew green in churchyards and
ſuch places, where the maner was to burn the bodies of the dead in funeral fires: but now adays
it is planted in courtyards and gardens neer our houſes, becauſe it may be eaſily kept with cut-
ting and ſhredding, it brancheth ſo well. This tree puts forth great aboundance of roſin, with K
white grains or kernels comming between, ſo like vnto frankincenſe, that if it be mixt therwith,
vnneth or hardly a man may diſcern the one from the other by the eye. And hereupon it com-
meth, that Druggiſts and Apothecaries do ſophiſticate frankincenſe, and deceiue folk with it.
All the ſort of theſe trees are leaued with ſhort thick and hard pricky briſtles in manner of the
Cypres. The Pitch tree beginneth to ſhoot forth branches euen from the very root almoſt, and
thoſe be but ſmall, bearing out like armes, and ſticking one againſt another in the ſides. Sem-
blably do the Fir trees, which are ſo much ſought for to ſerue ſhipping: and yet this tree de-
lighteth in the higheſt mountains, as if it fled from the ſea of purpoſe, and could not away with
it: and ſurely the form and maner of growing is all one with the pitch tree. The wood thereof
is principal good timber for beams, and fitteth our turn for many other neceſſaries of this life. L
Roſin if it be found in the Fir is thought a fault in the wood, whereas the only commoditie of
the pitch tree is her roſin; and yet ſomtime there frieth and ſweateth out a little thereof in the
extreme heate of the ſun. The timber of them both is not alike, for that of the Fir is moſt faire
and beautifull; the pitch tree wood ſerueth only for clouen lath or rent ſhindles, for coopers to
make tubs and barrels, and for ſome few other thin boords and painels.

As for the Larch tree, which is the fift kind of thoſe that beare roſin, like it is to the reſt, and
loueth to grow in the ſame places: but the timber is better by ods, for it rots not, but will laſt
and endure a long time: the tree wil hardly be killed: beſides, it is red of colour, & caries an ho-
ter and ſtronger ſmel than the other. There iſſueth forth of the tree as it growes, good ſtore of
liquid roſin, in colour like hony, ſomwhat more clammy, which will neuer grow to be hard. M

A ſixt ſort there is of theſe trees, and it is properly called Teda [i. the Torch tree:] the ſame
yeelds more plenty of moiſture and liquor than the reſt: lower it is of growth than the Pitch-
tree, but more liquid and thin: very commendable alſo to maintain fire at ſacrifices, & to burn
in torches for to giue light. Theſe trees, I mean the male only, bring forth that ſtrong and ſtin-
king

A king roſin, which the Greeks call Syce. Now if it happen that the Larch tree proue Teda, [i. to
be Torch-wood] it is a ſigne that it doth putrifie and is in the way of dying.

The wood of all theſe kinds before named, if it be ſet a fire, maketh an exceeding groſſe and
thick ſmoke, and preſently turneth into a cole, ſpitting and ſparkling a far off; except that on-
ly of the Larch tree, which neither burneth in light flame, nor maketh cole, ne yet conſumeth in
the fire otherwiſe than a very ſtone.

All theſe trees whereof we ſpeake continue greene all the yeare long: and very like they are
in leafe, that men otherwiſe of cunning and good experience, haue enough to do to diſcern one
from the other by it, ſo neere of kin they be, and their race ſo much intermingled. But the pitch
tree is not ſo tall as the Larch: for the Larch is thicker in body, of a thinner and lighter barke,
more ſhag leaued, and the ſaid leaues fattier, growing thicker, more pliable, and eaſier to wind
B and bend: whereas the leaues of the pitch tree hang thinner, they be of a drier ſubſtance, more
ſlender and ſubiect to cold: and in one word, the whole tree is more rough and hideous to ſee
to, and withall, full of roſin: the wood alſo reſembleth the Firre, rather than the Larch.

The Larch tree, if it be burnt to the very ſtumpe of the root, will not ſpring againe and put
forth new ſhoots: whereas the pitch tree liueth ſtil for all the fire, and wil grow afreſh: the ex-
perience whereof was ſeen in the Iſland Lesbos, at what time as the Forreſt Pyrrhæum was ſet
on fire, and clean burnt to the ground.

Moreouer, euery one of theſe kinds differ in the very ſex: for the male of each kind is ſhorter
and harder: the female taller, hauing fattier leaues, and the ſame ſoft and plain, & nothing ſtif
and rugged. The wood of the male is tough, and when it is wrought keepeth not a direct grain,
C but windeth and turneth, ſo as the carpenter muſt goe euery way about it with axe and plaine:
contrariwiſe that of the female is more frim and gentle. And commonly the axe or the hatchet
wil tell the difference of male and female in any tree; for what wood ſoeuer it be, it will ſoone
find and feele the male: for hardly is it able to enter, but either turnes edge, or rebounds again:
and whether a man hew or cleaue withall, it maketh more craſhing and a greater noiſe where it
ſetleth and taketh hold; it ſticketh alſo faſter, and with more ado is plucked forth. Moreouer,
the very wood of any male tree is of a more brown and burnt colour, yea, and the root of a blac-
ker hew.

About the forreſt Ida within the territory of Troas, there is another diſtinction of trees in
the ſame kind: for ſome grow vpon the mountaines, others toward the coaſt on the ſea ſide. In
D Macedony, Arcadia, and about Elis, theſe trees eftſoons change their names, ſo that the Greek
writers are not agreed how to diſtinguiſh their ſeueral ſorts, and range them in their due kind.
I therefore haue expreſt them according to the iudgment of Roman and Latine Authors.

Of al the trees aboue named, the Firs ſurpaſſe for bigneſſe, and the femals are the taller. The
timber alſo is more frim and ſoft, more profitable alſo, and eaſier to be wrought: the tree it ſelf
rounder, and ſo it brancheth archwiſe: the boughes as they reſemble wings ſtretched out and
diſplaied, ſo they ſtand ſo thicke with leaues, that they will beare off a good ſhower, inſomuch
as no rain is able to pierce through. In ſum, the female Firre is far more louely and beautifull
euery way than the male.

All the ſort of theſe foreſaid trees, ſaue onely the Larch, beare certain knobs like Catkins or
E Chats, compoſed (as it were) of many ſcales wrought one ouer another, and thoſe hang downe
dangling at the branches. Theſe knobs or clogs in the male Firre haue in the vpper end a ker-
nel within: but thoſe of the femal haue no ſuch thing. Moreouer, the pitch tree as it hath ſuch
catkins leſſe and ſlenderer; ſo all within, from one end to the other, the kernels be paſſing little
and black withall, like to lice or fleas, which is the reaſon that the Greekes call it Phthiropho-
ros. The ſaid catkins of the male pitch trees are more flat, and nothing ſo round as thoſe of the
females, leſſe gummie alſo, and not ſo moiſt of the roſin.

To come now to the Yugh, becauſe we would ouerpaſſe none: it is to ſee to like the reſt, but
that it is not ſo green; more ſlender alſo and ſmaller, vnpleaſant and fearefull to looke vpon, as
F a curſed tree, without any liquid ſubſtance at all: and of theſe kind of trees, it alone beares ber-
ries. The fruit of the male is hurtful: for the berries in Spain eſpecially haue in them a deadly
poiſon. And found it hath bin by experience, that in France the wine bottles made thereof for
wayfaring men and trauellers, haue poiſoned and killed thoſe that drunke out of them. *Seſtius*
ſaith, That the Greekes call it Smilax: and that in Arcadia it is ſo venomous, that whoſoeuer
take

take either repose or tepast vnder it,are sure to die presently. And hereupon it commeth, that those poisons wherewith arrow heads be invenomed,after some were called in times past Taxica, which wee now name Toxica. But to conclude, it is seen by good proose, that if a brasen wedge or spike be driuen into the very body of the tree, it loseth all the venomous nature, and becommeth harmlesse.

Chap. XI.

¶ *How to make all kinds of Pitch. The maner how Cedrium is made. Also, of thicke Pitch, how it is made; and in what sort Rosin is boiled.*

THe liquid Pitch or Tar throughout all Europe is boiled out of the Torch tree: and this kind of pitch serueth to calke ships withall,and for many other vses. Now the manner of drawing Tarre out of this tree,is,to cut the wood thereof into pieces,and when they are piled vp hollow into an heape,to make a great fire within,as it were vnder a furnace,being claied without-forth: thus with the heate of the fire it doth fry and seeth again. The first liquour that sweateth and issueth forth runneth cleare as water,in a channell or pipe made for the purpose,and this the Syrians cal Cedrium: which is of such force and efficacy,that in Egypt they vse to embalme the dead bodies of men and women departed, and keep them from putrefaction. At the next running it is thicker,and this second liquor is very pitch. Howbeit this is cast again into certaine coppers or cauldrons of brasse, and together with vineger sodden a second time,vntill it come to a thick * consistence: and when it is thus thickened, it taketh the name of Brutian pitch,good only for tuns,barrells, and other such vessels. Much like it is to the former pitch,but that it is more glutinous and clammy,redder also of colour,and more farty. And thus much concerning the pitch made of the Torch tree.

* Pallimpissa, i. Stone-pitch.

As for that which comes of the pitch tree,the rosin thereof is drawne with red hot stones in certain vessels made of strong and thick oken planks: or in default thereof,the wood is clouen into pieces,and piled together after the order of a charcole hearth,& so the pitch boiles forth. The vse hereof when it is beaten into a kind of meale or pouder,is to be put into wine, and it is of a blacker colour than the rest. The same pitch-rosin,if it be boiled more lightly with water, and be let to run through a strainer,comes to a reddish colour,and is glewie: and thereupon it is called stilled Pitch. And for this purpose lightly, is set by the more grosse and faultie substance of the rosin,together with the bark of the tree. But there is another composition and maner of making of pitch,that serueth for heady wine,called Crapula. For the floure of the Rosin is taken green and fresh,as it distilleth from the tree, together with a good quantitie of small, thin, and short spils or chips of the tree plucked away with the same: the same are minced or shred so small,as they may passe through a sieue or a riddle: which don,all is put into scalding water,and there boileth vntill it be incorporate with the water. The fat substance that is strained and pressed from hence, is the excellent pitch Rosin, hard to come by, and not to be found in Italy, vnlesse it be in few places vnder the Alps,and very good it is in physick. Now to make it passing white,there must be taken one galon of the rosin,& sodden in two gallons of rain water. But some think it the better way to seeth it a whole day together at a soft fire,without any matter at all,in a pan or vessell of Latton. Others there be likewise that boile Turpentine in a hot frying pan,and are of opinion,that this is the best of all others. And the next to it in goodnesse is the Lentiske rosin,called Mastich.

Chap. XII.

¶ *Of the Pitch Zopissa, which is scraped from ships: and of Sapium. Also what trees are in request for their timber.*

IT would not be forgotten,that the Greeks haue a certaine Pitch, scraped together with wax from the ships that haue lien at sea,which they Zopissa(so curious are men to make experiments and try conclusions in euery thing:) and this is thought to be much more effectuall for all matters that pitch and rosin are good for, by reason of the fast temperature that it hath gotten by the salt water.

For

A For to draw rosin out of the * Pitch-tree, it must be opened on the Sun side,not by giuing a slit or gash in the bark,but by cutting out a peece therof,so that the tree may gape and lie bare two foot at the most:and from the earth, this wound to be at least a cubite. Neither doe they spare the entire bodie and wound of the tree,as they do in the rest:for there is no danger therof, considering that the very chips of the wood being cut out,are ful of liquor,and do serue to make pitch. But the nearer that the said ouerture or hole is made to the earth, the better is the rosin that issues forth: for if it be higher it is better. When this is don,all the humor afterwards runneth to the vleer or incision aforsaid,from euery part of the tree. The like it doth in the Torch pine. When it hath left running to the first hole, there is a second likewise made on another side,and so still is the tree opened euery way:vntill at length tree and all is hewn downe,and the very pith and marrow thereof serueth for Torch wood to burne. Semblably,in Syria they vse to plucke the barke from the Terebinth: yea, and they pill the boughes and roots too for Terpentine, how soeuer in other trees the rosin issuing out of those parts, is not counted good, in Macedonie the manner is to burne the male Larch, but the roots onely of the female for to draw out pitch. *Theopompus* wrate,that there is found in the territorie of the Apolloniats,a kind of minerall pitch,called Pissasphaltum,nothing inferiour in goodnesse to the Macedonian.

B

The best pitch in all countries,is that which is gathered from trees,standing vpon the North wind, and in places exposed to the Sunne-shine. As for that which commeth from shadowie places,it is more vnpleasant to the eie, and carieth besides a strong and stinking sauor. If it bee a cold and hard winter,the pitch then made is the worse, there is also lesse store of it,& nothing is it so well coloured. Some are of opinion, That the pitch issueth in more abundance out of trees in the mountaines,also that it is better colored,sweeter in tast,more pleasant also in smel, namely,while it is raw pitch-rosin,and as it runneth from the tree:but if it be boiled, it yeelds lesse plentie of pitch than that which commeth of trees in the plain,and runneth all into a thin liquor in manner of whey,yea, and the very trees themselues are smaller. But both the one and the other, as wel the mountain pines and pitch-trees,as those of the plaines,yeeld not so much pitch in a faire and drie season,as when the weather is rainy and full of clouds. Moreouer,some there be of these trees that yeeld forth fruit(which is their rosin) the very same yere that immediately followeth their incision; others,two yeares after;yea,and some again in the third yeare.

C

As for the incision or open wound that is made, it filleth vp with rosin:for neither doth it sounder or vnite in manner of a skar,ne yet closeth the barke againe: for in this tree, being once diuided it will neuer come together and meet.

D

Among these trees,some haue reckoned one kind by it selfe named Sapium,because it is replanted and groweth of some of the sions or imps of the said trees,in maner as hath been shewed before in our treatise of nut-kernells. The neather parts of which tree they call Teda [*i.* Torch-wood:] whereas indeed this tree is no other than the Pitch-tree, brought to a more mild and gentle nature by transplanting. As for that which the Latines call Sapinus, it is nothing else but the wood or timber of these kinde of trees, being hewed or cut downe, as well * hereafter declare in place conuenient.

* Chap 3 5. of his booke.

E

Chap. XIII.

¶ *Of the Ash, foure kinds thereof.*

THere be many trees besides that Nature hath brought forth,only for their wood and timber:and among them the Ash,which of all others,growes most plentifully in euery place.

A tall tree this is & grows round, bearing leaues set in maner of feathers or wings; much ennobled by the praise and commendation that the Poet *Homer* giueth it,as also for the speare or launce of *Achilles*, made thereof. And in very truth, the wood serueth right well for many vses. As for the timber of the ash,growing vpon the forrest Ida in Troas,it is so like the citron wood,that when the barke is off,a man may hardly discerne the one from the other, insomuch, as the merchants and chapmen are deceiued therewith.

F

The Greekes haue made two kinds of the Ash: the one runneth vp tall and euen without a knot:the other is lower,more tough and hard,and withall,of a more browne and duskish color: and the leaues resemble the Lawrell. In Macedony they haue an Ash, which they cal Bumelia, which of all other is the tallest and biggest, the wood thereof is most pliable and bending. Others

thers haue put a difference betweene Asshes, according to the places: for that of the plaine and champion countrey, hath a more curled or frisled graine than the other of the mountaines, but contrariwise, the wood of this is more compact and harder than the other. The leaues of this tree, according to the Greeks, are hurtfull, venomous and deadly to Horses, Mules, and such laboring garrons; but otherwise to beasts that chew the cud, they be harmlesse. Howbeit, in Italy if horses, &c. do brouse of the leaues, they take no harme thereby. Moreouer, they be excellent good, and nothing so soueraigne can be found against the poison of serpents, if the juice therof be pressed forth and giuen to drinke; or to cure old vlcers, if they be applied and laid thereto in manner of a Cataplasme: nay, so forcible is their vertue, that a serpent dareth not come neare vnto the shadow of that tree, either morning or euening, notwithstanding at those times it reacheth farthest; you may be sure then they will not approch the tree it selfe, by a great way. And this am I able to deliuer by the experience which I haue seene, that if a man doe make a round circle with the leaues thereof, and enuiron therwith a serpent and fire together within, the serpent will chuse rather to go into the fire, than to flie from it to the leaues of the Ash. A wonderfull goodnesse of dame Nature, that the Ash bloometh and flourisheth alwaies before that serpents come abroad; and neuer sheddeth leaues, but continueth greene, vntill they be retired into their holes, and hidden within the ground.

Chap. XIIII.

¶ *Of the Line or Linden tree, two sorts thereof.*

GReat difference there is euery way between the male & female Linden tree: for, the wood of the male is hard and knottie, of a redder colour also, and more odoriferous than the female. The barke moreouer is thicker, and when it is plucked from the tree, it is stiffe, and will not bend. It beareth neither seed nor floure, as the female doth: which also is rounder and bigger in bodie, and the wood is whiter, more faire and beautifull by farre than is the male. A strange thing it is to consider, that there is no liuing creature in the world will touch the fruit of the Linden tree, and yet the juice both of leaf and barke is sweet ynough. Between the bark and the wood of this tree there be thin pellicles or skins lying in many folds together, whereof are made bands & cords called Brazen ropes. The finest of these pellicanes or membrans serued in old time for to make labels and ribbands belonging to chaplets, and it was reputed a great honor to weare such. The timber of the Linden or Tillet tree will neuer be worm-eaten. * The tree it selfe is nothing tall, but of a meane height, howbeit the wood is very commodious.

* *Pliny herin is deceiued. For the Line Tree with vs is cõparable to the highest Okes in talnesse.*

Chap. XV.

¶ *Ten kinds of the Maple tree.*

THe Maple in bignesse is much about the Linden tree: the wood of it is very fine and beautifull, in which regard, it may be raunged in the second place, and next to the very Citron tree. Of Maples there be many kinds: to wit, the white, and that is exceeding faire and bright indeed, growing about Piemont in Italie, beyond the riuer Po, & also beyond the Alps, and this is called the French Maple. A second kind there is, which hath a curled graine running too and fro with diuers spots; the more excellent worke whereof, resembling the eies in the Peacockes taile, thereupon took also the name. And for this rare and singular wood, the countries of Istria and Rhætia be chiefe. As for that which hath a thicke and great graine, it is called Crassiuenium of the Latines, and is counted to be of a baser kind. The Greekes distinguish Maples by the diuerse places where they grow. For that of the champion or plaine countrey (which they name Glinon) is white, and nothing crisped: contrariwise, the wood of the mountaine Maple is harder and more curled, and namely, the male of that sort, and therefore it is in great request for most exquisite and sumptuous workes. A third sort they name Zygia, which hath a reddish wood, and the same easie to cleaue: with a barke of a swert colour, and rough in handling. Others would haue it to be no Maple, but rather a tree by it selfe, and in Latine they call it Carpinus.

Chap.

Chap. XVI.

¶ *Of the Bosses, Wennes, and Nodosities, called Bruscum and Molluscum. Of the wild Fisticke or Bladder nut-tree called Staphylodendron: also three kinds of the Box tree.*

THe bunch or knurre in the Maple, called Bruscum, is passing faire, but yet that wich is named Molluscum, excelleth it. Both the one and the other swell like a wen out of the Maple. As for the Bruscum, it is curled and twined after a more crawling and winding manner; whereas the Molluscum is spread with a more direct and strait course of the grain. And certes, if there might be plankes hereof found broad enough to make tables, doubtlesse they would be esteemed and preferred before those of the Citron wood. But now it serueth only for writing tables, for paincls also and thin bords in wainscote work, to set out beds heads and seelings, and such are seldome seen. As for Bruscum, there be tables made of it inclining to a blackish color. Moreouer, there be found in Alder trees such nodosities; but not so good as those, by how much the wood of the Alder it selfe is inferior to the Maple, for beauty and costlines. The male Maples do put forth leaues and flourish before the female. Yea, and those that grow vpon dry grounds are ordinarily better esteemed than those of moist and watersh places, in like sort as the ashes.

Beyond the Alps there is a kind of bladder Nut-tree; whereof the wood is very like to the white white Maple, and the name of it is Staphylodendron. It beareth certain cods, and within the same, kernels in tast like the Filberd or Hazell-nut.

Now for the Box tree, the wood thereof is in as great request as the very best: seldom hath it any grain crisped damask-wise, and neuer but about the root, the which is dudgin and ful of work. For otherwise the grain runneth streight and euen without any wauing: the wood is sad enough and weighty: for the hardnesse thereof and pale yellow colour much set by and right commendable. As for the tree it selfe, gardeners vse to make arbors, borders, and curious works thereof. Three sorts there be of the Box tree: the first is called the French Box, it groweth taper-wise, sharp pointed in the top, and runneth vp to more than ordinarie height. The second is altogether wild, and they name it Oleastrum, good for no vse at all, and besides carieth a strong and stinking sauor with it. The third is our Italian box, and so called. Of a sauage kind I take this to be also: howbeit by setting and replanting brought to a gentle nature. This spreadeth and brancheth more broad, and herewith a man shall see the borders and partitions of quarters in a garden, growing thick and green all the yeare long, and kept orderly with cutting and clipping. Great store of box trees are to be seen vpon the Pyrenæan hils, the Cytorian mountains, and the whole Berecynthian tract. The thickest and biggest Box trees be in Corsica, and they beare a louely and amiable floure, which is the cause that the hony of that Island is so bitter. there is not a beast that will eat the fruit or grain thereof. The Boxes of Olympus in Macedonie are more slender than the rest, and but low of growth. This tree loueth cold grounds, yet lying vpon the Sun. The wood is as hard to burn as iron: it will neither flame nor burn cleare it selfe, nor serue to make charcole of.

Chap. XVII.

¶ *Of the Elme foure kinds.*

BEtween these wild trees aboue said, and those that bear fruit, the Elm is reckoned of a middle nature, in regard of the wood and timber that it affords, as also of the friendship & acquaintance that it hath with vines. The Greekes acknowledge two sorts thereof, namely, one of the mountains, which is the taller and the bigger; and the other of the plaines & champion, which is rather more like a shrub, the branches that it shooteth forth are so smal and slender. In Italy men hold the Elmes about Atinum to be the tallest, and of those they prefer them which grow in dry grounds, and haue no water comming to them, before those by riuers sides. A second sort of them, which are not all out so great, they call the French Elmes. The third kinde be the Italian Elmes, thicker growne with leaues than the rest, and those proceeding in greater number from one stem. In the fourth place be ranged the wilde Elmes. The Atinian

Elmes

Elmes aboue said beare no Samara (for so they cal the seed or grain of the Elme.) All the kind of them are planted of sets taken from the roots, whereas others come of seeds. G

Chap. XVIII.

¶ The nature of trees as touching the place where they grow.

HAuing thus discourſed in particular of the moſt famous and noble trees that are, I think it not amiſſe to ſay ſomewhat of their natures in generall. And firſt to beginne with the mountain high countries: the Cedar, the Larch, and the Torch-tree loue to grow among the hills; like as all the reſt that ingender roſin: ſemblably, the Holly, the Box tree, the Maſt-Holme, the Iuniper, the Terebinth, the Poplar, the wilde Aſh Ornus, the Cornell tree, and the Carpin. Vpon the great hill Apennine there is a ſhrub named Cotinus, with a red or purple H wood, moſt excellent for in-laid works in Marquetry. As for Firs, the wild hard okes (Robora) Cheſtnut trees, Lindens, Maſt-holmes, and Cornell trees, they can away with hills and vallies indifferently. The Maple, the Aſh, the Seruis tree, the Linden, and the cherry tree, delight in the mountains neere to waters. Lightly a man ſhall not ſee vpon any hills, Plum trees, Pomegranat trees, wild Oliues, Walnut trees, Mulberry trees, and Elders. And yet the Cornel tree, the Haſel, the common Oke, the wild Aſh, the Maple, the ordinary Aſh, the Beech, and the Carpin, are many times found to come downe into the plaines: like as the Elme, the Apple tree, the Peare tree, the Bay tree, the Myrtle, the Bloud ſhrubs, the Holme, and the Broome (which naturally is ſo good for to dry clothes) do as often climbe vp the mountains. The Servis tree gladly grow- I eth in cold places, ſo doth the Birch, and more willingly of the twaine. This is a tree which is meere French, and came firſt out of France: it ſheweth wonderfull white, and hath as fine and ſmall branches or twigs, which are ſo terrible to the offenders, as wherewith the Magiſtrates rods are made for to execute juſtice. And yet the wood of this tree is paſſing good for hoopes, ſo pliable it is and eaſie to bend: the twigs thereof ſerue alſo for to make paniers and baskets. In France they vſe to boile the wood, and thereof draw a glutinous and clammy ſlime in maner of Bitumen. In the ſame quarters there loueth to grow for company the white thorn, which in old time they were wont to burne for torches at weddings, and it was thought to be the moſt fortunate and lucky light that could be deuiſed, becauſe (as *Maſſurius* reporteth) the Romane ſhepheards and heardmen who rauiſhed the Sabine maidens, were furniſhed euery one with a branch thereof to make them torches. But now adaies the Carpine and Hazel are commonly K vſed for ſuch nuptial lights. The Cypres, walnut, Cheſtnut trees, and the Laburnum, cannot in any wiſe abide waters. This laſt named is a tree proper to the Alps, not commonly known: the wood thereof is hard and white: it beares a bloſſom of a cubit long, but Bees will not ſettle vpon it. The plant likewiſe called Iouis Barba, ſo handſom to be cut in arbors and garden works, which groweth ſo thicke and round withall, full of leaues, and thoſe of a ſiluer colour, hates waterie places. Contrariwiſe, Willows, Alders, Poplars, and Oſiars, & the Priuet which is ſo good for to make dice, will not grow well and proſper but in moiſt grounds. Alſo the Vacinia or Whortles, ſet and ſowed in Italy for the Fowlers to catch birds withall; but in France for the purple colour, wherewith they vſe to die clothes for their ſeruants and ſlaues.

To conclude, this is a generall rule, What trees ſoeuer will grow indifferently as well vpon L hills as plaines, ariſe to be taller, bigger, and carry a fairer head to ſee to in the low champion grounds: but timber is better, and caries a more beautifull grain vpon the mountaines, except only Apple trees and Pyrries.

Chap. XIX.

¶ A diuiſion of Trees according to their generall kinds.

MOreouer, ſome trees loſe their leaues, others continue alwaies green. And yet there is another difference of trees before this, and whereupon this dependeth. For trees there be which are altogether wild and ſauage: there be again which are more gentle and ciuil: and theſe names me thinks are very apt to diſtinguiſh them. Thoſe trees therefore which are ſo M kind and familiar vnto vs, as to ſerue our turns either with their fruit which they bear, or ſhade which they yeeld, or any other vertue or property that they haue, may be very aptly and fitly be called ciuill and domeſticall.

Chap.

Chap. XX.

¶ Of Trees that neuer ſhed their leaues: alſo of Rhododendron.

AMong theſe trees and plants which are of the gentle kind, the Olive, the Lawrel, the Date tree, Myrtle, Cypres, Pines, Ivy, and the Oleander, loſe not their leaues. As for the Oleander, although it be called the Sabine herb, yet it commeth from the Greeks, as may appeare by the name Rhododendron. Some haue called it Nerion; others Rhododaphne: it continueth alwaies green leafed, beareth floures like roſes, and brancheth very thicke. Hurtfull it is and no better than poiſon, to Horſes, Aſſes, Mules, Goats, and Sheepe; and yet vnto man it ſerueth for a countrepoyſon, and cureth the venom of ſerpents. B

Chap. XXI.

¶ What trees ſhed not their leaues at all: which they be that loſe them but in part: and in what countries all trees are euer greene.

OF the wild ſort, the Fir, the Larch, the wilde Pine, the Iuniper, the Cedar, the Terebinth, the Box tree, the Maſt-holme, the Holly, the Cork tree, the Yew, and the Tamariske, be green all the yeare long. Of a middle nature between theſe two kinds aboue named, are the Adrachne in Greece, and the Arbut or Strawberry tree in all countries: for theſe loſe the leaues of their water boughs, but are euer green in the head. Among the ſhrubs kind alſo there C is a certain bramble and Cane or Reed, which is neuer without leaues. In the territorie of Thurium in Calabria, where ſomtime ſtood the city Sybaris, within the proſpect from the ſaid Citie, there was an Oke aboue the reſt to be ſeen, alwaies green and ful of leaues, and neuer began to bud new before Midſummer: where by the way I maruel not a little, that the Greek writers deliuered thus much of that tree in writing, and our countrymen afterwards haue not written a word thereof. But true it is, that great power there is in the clymat, inſomuch as about Memphis in Egypt, and Elephantine in the territorie of Thebais, there is not a tree, not ſo much as the very Vine, that ſhedderh leaues.

Chap. XXII.

D *¶ The nature of ſuch leaues as fall from trees: and what leaues they be that change colour.*

ALl trees without the range of thoſe before rehearſed (for to reckon them vp by name particularly were a long and tedious piece of work) do loſe their leaues in winter. And verily this hath bin found and obſerued by experience, that no leaues doe fade and wither, but ſuch as be thinne, broad, and ſoft. As for ſuch as fall not from the tree, they be commonly thick skinned, hard, and narrow: and therefore it is a falſe principle and poſition held by ſome, That no trees ſhed their leaues which haue in them a fatty ſap or oleous humiditie: for who could euer perceiue any ſuch thing in the Maſt-holme? a drier tree there is not, and yet it hol- E deth alwaies green. *Timæus* (the great Aſtrologer and Mathematician) is of opinion, that the Sun being in the ſigne Scorpio, he cauſeth leaues to fall, by a certain venomous and poyſoned infection of the aire, proceeding from the influence of that maligne conſtellation. But if that were true, we may wel and iuſtly maruell, why the ſame cauſe ſhould not be effectuall likewiſe in all other trees. Moreouer, we ſee that moſt trees do let fall their leaues in Autumne: & ſome are longer ere they ſhed, continuing green vntill winter be come. Neither is the timely or ſlow fall of the leafe long of the early or late budding: for wee ſee ſome that burgen and ſhoot out their ſpring with the firſt, and yet with the laſt ſhed their leaues and become naked: as namely the Almond trees, Aſhes, and Elders. And contrariwiſe the Mulberry tree putteth forth leaues F with the lateſt, and is one of them that ſooneſt ſheddeth them again. But the cauſe hereof lies much in the nature of the ſoile: for the trees that grow vpon a leane, dry, and hungry ground, do ſooner caſt leafe than others: alſo old trees become bare before yonger; and many of them alſo loſe their leaues before their fruit be fully ripe: for in the Fig tree, that commeth and beareth late, in the winter Pyrry, and Pomegranate, a man ſhall ſee in the later end of the yere fruit

only, and no leaues vpon the tree. Now as touching those trees that continue euer greene, you must not think that they keep still the same leaues, for as new come, the old wither & fal away: which hapneth commonly in mid-Iune about the Summer Sunne-stead. For the most part, the leaues in euery kind of tree do hold one and the same colour, and continue vniform, saue those of the Poplar, Ivy, and Croton, which wee said was called also Cici [*id est*, Ricinus, or Palma Christi.]

Chap. XXIII.

¶ *Three sorts of Poplar: and what leaues they be that change their shape and figure.*

OF Poplars there be found three sundry kinds, to wit, the white, the blacke, and that which is named * Lybica, or the Poplar of Guynee: this hath least leaues, and those of all other blackest: but mow commendable they are for the fungous meazles (as it were) that come forth thereof. As for the white Poplar leafe, the leaues when they be yong, are as round as if they were drawn with a paire of compasses, like vnto those of Citron before named: but as they grow elder, they run out into certain angles or corners. Contrariwise, the Ivy leaues at the first be cornered, and afterwards become round. All Poplar leaues are full of downe: as for the white Poplar (which is fuller of leaues than the rest) the said downe flieth away in the aire like to mossie chats or Thistle-downe. The leaues of Pomegranats and Almond trees stand much vpon the red colour. But very strange it is and wonderfull which hapneth to the Elme, Tillet, or Linden, the Oliue tree, Aspe, and Sallow or Willow: for their leaues after Midsummer turn about vpside downe, in such sort, as there is not a more certaine argument that the Sun is entred Cancer, and returneth from the South point or Summer Tropicke, than to see those leaues so turned.

* Taken by some to be our Aspe.

Chap. XXIIII.

¶ *What leaues they be that vse to turne euery yeare. Of Palme or Date tree leaues, how they are to be ordered and vsed. Also certain wonderfull obseruations about leaues.*

THere is a certain general and vniuersal diuersitie & difference obserued in the very leaf: for commonly the vpper side which is from the ground, is of greene grasse colour, more smooth also & polished. The outside or nether part of the leaf hath in it certain strings, sinues or veins, brawns and ioynts, bearing out like as in the back part of a mans hand: but the inside cuts or lines in maner of the palme of ones hand. The leaues of the oliue are on the vpper part whiter and lesse smooth; and likewise of the Ivy. But the leaues of all trees for most part, euery day do turn and open to the Sunne, as desirous to haue the inner side warmed therewith. The outward or nether side toward the ground of all leaues, hath a certaine hoary downe more or lesse here in Italy, but in other countries so much there is of it, that it serueth the turn for wooll and cotton. In the East parts of the world they make good cordage and strong ropes of date tree leaues (as we haue said before) and the same are better, & serue longer within than without. With vs these Date leaues are pulled from the tree in the Spring, whiles they are whole and entire; for the better be they which are not clouen or diuided. Being thus plucked, they are laid a drying within house foure daies together. After that, they be spred abroad and displaied open to the Sun, and left without dores to take all weathers both day and night, and to be bleached, vntil they be dry and white: which done, they be sliued and slit for cord-work. But to come again to other leaues, the broadest are vpon the Fig-tree, the Vine, and the Plane; the narrowest vpon the Myrtle, Pomegranat, and oliue: as for those of the Pine and cedar, they be hairy: the Holly leaues and all the kindes of Holme be set with sharpe prickes. As for the Iuniper, in stead of leafe it hath a very pointed thorne. The Cypresse and Tamariske carrie fleshie leaues: those of the Alder be most thick of all other. The Reed and the Willow haue long leaues: the Date tree hath them double. The leaues of the Peare tree are round, but those of the Apple tree are pointed; of the Ivie cornered: of the Plane tree diuided into certaine incisions; of the Pitch tree and the Fir cut in, after the maner of comb-teeth; of the wild hard

A hard Oke, waued and indented round about the edges; of the brier and bramble, sharpe like thornes all the skin ouer. Of some, they be stinging and biting, as of Nettles: of others ready to pricke like pins or needles, as of the Pine, the Pitch tree, the Larch, the Firre, the Cedar, and all the sorts of Holly. The leaues of the Oliue tree, and the Mast-Holme, hang by a short steele, the Vine leaues by a long. The Poplar or Aspen leaues doe shake and tremble, and they alone keep a whistling and rustling noise one with another. Moreouer, in the very fruit it selfe, and namely in a certain kind of Apples, ye shall haue small leaues breake out of the very sides in the midst, in some single, in others double and two together. Furthermore, there be trees that haue their leaues comming forth about their boughs and branches, others at the very end and shoot of the twig: as for the wild Oke Robur, it putteth leaues forth of the trunk and maine stock. Ouer B and besides, the leaues grow thicker or thinner in some than in others; but alwaies the broad and large leaues, are more thinne than others. In the Myrtle tree, the leaues grow in order by ranks; those of the Box tree turn hollow; but in the Apple trees they are set in no order at al. In Pyrries & Apple trees both, ye shal see ordinarily many leaues put forth at one bud, hanging at one and the same taile. The Elme, and the Tree-trifolie, are full of small and little branches. Ouer and addeth moreouer and saith, That such as fall from the Poplar or the Oke, may bee given as fodder to beasts, but he wils that they be not ouer drie: and he saith expressely, that for kine and oxen, Fig-leaues, mast Holm leaues, and Iuie, are good fodder: yea and such kind of beasts may well brouse and feed of Reed leaues and Bay leaues. Finally, the Seruise tree looseth her leaues al at once, others shed them by little and little one after another. And thus much for the leaues C of trees.

Chap. XXV.

¶ *The order and course obserued in Nature as touching plants and trees, in their conception, flouring, budding, knotting, and fructifying. Also in what order they put forth their blossomes.*

THe manner and order of Nature yeare by yeare, holdeth in this wise: first, trees and plants do conceiue by the meanes of the Westerne wind Fauonius, which commonly beginneth to blow about sixe daies before the Ides of Februarie: for this wind is in stead of an hus- D band to all things that grow out of the earth, and of it they desire naturally to be conceiued, like as the Mares in Spaine, of which we haue written heretofore. This wind is that spirit of generation which breathes life into all the world; which the Latines call thereupon Fauonius, *a fauendo*, [*i.* of cherishing and nourishing euery thing] as some haue thought. It blowes directly from the Æquinoctiall Sun-setting, and cuermore beginneth the Spring. This time, our rustical peasants call the Seasoning, when as Nature seemeth to goe proud or assaut, and is in the rut and furious rage of loue, desirous to conceiue by this wind, which indeed doth viuifie and quicken all plants and seeds sowne in the ground. Now of all them conceiue not at once, but in sundry daies: for some are presently sped in a moment, like as liuing creatures: others are not so hastie to conceiue, but long it is first ere they retaine, and as long againe before their vitall seed E putteth forth; and this is therupon called their budding time. Now are they said to bring forth and be deliuered, when in the Spring they bloome, and that blossome breaketh forth of certain matrices or ventricles. After this they become nources all the while they cherish and bring vp the fruit: and this time also the Latines call Germinatio, [*i.* the breeding season.] When trees are full of blossomes, it is a signe that the Spring is at the height, and the yeare become new againe. The blossom is the very ioy of trees, and therein standeth their chiefe felicitie: then they shew themselues fresh and new, as if they were not the same; then be they in their gay coats; then it seemeth they striue avie one with another in varietie of colours, which of them should excell and exceed in beautifull hew. But this is not generall, for many of them are denied this pleasure, and enjoy not this delight; for all trees blossome not: some are of an heauie and sad F countenance, neither cheare they at the comming of this new season and glad some Spring: for the mast-Holme, the Pitch tree, the Larch, and the Pine doe not bloome at all, they are not arrayed in their robes, they haue not their liueries of diuers colors to fore-signifie (as messengers and vantcourriers) the arriuall of the new yeare, or to welcome and solemnize the birth of new fruits. The Figge trees likewise both tame and wild, make no shew of floures: for they are not

too soon bloomed (if they bloom at all) but they bring forth their fruit. And a wonderful thing G
it is to see what abortiue fruit these Figge-trees haue, and how it neuer commeth to ripenesse.
Neither doe the Iunipers bloome at all. And yet some writers there be who make two kinds
thereof: and they say, that the one flowreth, and bears no fruit, as for the other which doth not
blossome, it brings forth fruit vpon fruit, and berrie vpon berrie, which hang two yeres vpon the
tree before they come to maturitie. But this is false, for in very truth all Iunipers without ex-
ception, haue euermore a sad looke, and at no time shew merie. And this is the case and condi-
tion verily of many a man, whose fortune is neuer in the floure nor maketh any outward shew
to the world. Howbeit there is not a tree but it buddeth, euen those that neuer blossome: And
herein the diuersitie of the soile is of great power: for in one and the same kind, such as grow in
marish grounds, do shoot and spring first; next to them, those of the plaines; and last of all they H
of the woods and forrests. And generally the wilde Pyrries growing in woods doe bud later
than any other. At the first comming of the western wind Fauonius, the Corneil tree buddeth;
next to it, the Bay; and somewhat before mid-march or the spring Æquinoctiall, the Tillet or
Linden, and the Maple, the Poplar, Elme, Willow, Alder, and Filberds or Hazell nut trees, bud
with the first. The Palme also maketh hast and is loth to come behind. All the rest at the point
and prime of the spring, namely the Holly, the Terebinth, the Paliurus, the Cheston, and the
Walnut-trees, or Mast-trees. Apple trees are late ere they bud, but the Corke tree longest of
any other. Trees there be that put forth bud vpon bud, by reason that either the soile is exceed-
ing battill and fat, or else the weather faire and pleasant: and this happeneth more to be seene
in the blades of corne. But trees if they happen to be ouer rancke in new shoots and buds, they I
waxe wearie and grow out of heart.

Ex Theophr. de his fabulæ.

Moreouer, some trees there be that naturally do sprout at other seasons besides the spring,
according to the influence of certaine starres, whereof the reason shall be rendred more conue-
niently, in the third booke next ensuing after this. Meane time this would be obserued, That
the winter spring of trees is about the rising of the Ægle-star: the Summer budding at the rising
of the Dog-star: and a third, when the star Arcturus is vp. And for the two later, some would
haue them verily to be common to all trees, but most euidently seen, in Fig-trees, Vines, Pome-
granate trees: and they yeeld a cause, For that in Thessalie and Macedonie the Fig tree about
these times putteth forth most plenteously: and in Ægypt this reason is to be seene most appa-
rantly. As for all other trees, certaine it is, that when they begin once to bud, they hold on and K
shoot forward continually without intermission. The wild Oke, the Fir, and the Larch tree, haue
their seuerall shoots in one yere, and spring at three sundrie times, giuing ouer between whiles;
and therefore they put forth the sprouts between the skales of their barks: a thing vsually hap-
ning to all trees in their budding & breeding time: for after they be once conceiued, their rind
or bark bursteth withall. Now their first budding is in the prime & beginning of the spring, and
continueth much about 15 daies. They bud a second time in the moneth of May when the sun
passes thorough the signe Gemini: by which time it is euidently to be seen, how the bud heads
that came first, are driuen and thrust vp higher by those that follow after; & that appeares more
plainly by the encrease of the knots & joynts. As for the third budding, it is very short, name-
ly at * midsummer, and lasteth not aboue a seuen-night: and euen then also may a man perceiue L
manifestly by the knots and joynts of the shoots how much they are put forth and grown. The
Vine alone shooteth twice, to wit, when she first beginneth to burgen & put forth a grape; and
a second time, when she formeth and digesteth or concocteth the same. As for those trees that
blossome not, they haue no more to doe but only to bring forth their fruit, and so proceed to ri-
pen it. Now there are some trees, which no sooner bud, but they shew also a blossom; and yet as
hasty as they be that way, they take their leisure afterwards, and long it is ere their fruit come
to be ripe: and such are the Vines. Others again be as backward and slow both to bud and blos-
some; but they make speed to ripen their fruit, as the Mulberry tree, which of ciuile and dome-
sticall trees, is the last that buds, and neuer before all the cold weather is past; and therfore she
is called the wisest tree of all others: but after that she begins once to put forth buds, she di- M
spatches her busines out of hand, insomuch as in one night she hath done; and that with such a
force, that in the breaking forth a man may euidently heare a noise. Of those trees that conceiue
in winter, about the rising of the Ægle-star, (as we haue before said) the Almond tree is the first
that blossometh in the moneth of Ianuarie, and by March the Almond is ripe. The next that
blossome

* Solstitium.

A blossome after it, be the Peach Plum-trees of Armenia, then the Iujube trees called Tuberes,
and the Abricots. As touching the former, they be meere strangers, but these Abricots are for-
ced by Art and industrie of man. As for wild and sauage trees, by course of nature the Elder
floures first, and hath of all other most plentie of pith or marrow within, whereas the male Cor-
neil hath none at all. But of domesticall and ciuile trees, the Apple tree beginneth to blossome,
and soone after the Pyrry, Cherrie tree, and Plum tree, insomuch as they seeme all to floure to-
gether. Next to them, is the Lawrell; anon after it, the Cypresse; and then the Pomegranat, and
the Fig tree: Vines and Oliue trees do but then burgen and bud, when those other be in their
floure: for in truth they conceiue late, namely, at the rising of the Vergiliæ or Brood-hen; for
this is the proper star to the influence whereof these trees be subject: and it is Iune first and
B the summer Sun-stead, before the vine bloomes; and so it is with the Oliue tree, but that it com-
meth somewhat later. All trees be seuen daies at the least in their blossoming; and some be lon-
ger ere they giue ouer, but none passe a fortnight: and done they haue euer by the eight day be-
fore the Ides of Iuly; which are forerunners of the Etesian winds. Finally, some trees there are
which doe not knit nor shew their fruit immediatly vpon their blooming.

Chap. XXVI.

Of the Corneil tree. Also, what is the proper time wherein euery tree beareth: which trees be they that beare not, and which be reputed vnluckie. Also of those trees which soonest lose their fruit. Last of all, what trees shew fruit before leafe.

C

AS for the Corneil tree, it is about midsummer or the summer Sun-stead, before it putteth forth any fruit, which at first is white, afterwards red as bloud. But the female of this kind beareth after Autumne, sowre berries, and such as no beast will abide to tast. The wood thereof also is spungeous, hollow, and good for nothing; whereas that of the male is counted among the hardest that be: so great difference there is in trees of one and the same kind. Moreouer, the Terebinth, Maple, and Ash, yeeld their fruit or seed in haruest time: Walnuts, Apples, and Peares (vnlesse they be some winter fruits, or of the hastie kind) ordinarily are readie to be gathered in the Autumn. All mast trees be later ere they render their fruit, to wit, about the go-
D ing downe of the Vergiliæ or beginning of the winter, saue only the Æsculus, which passeth not the Autumne. As for certain Apple trees and Peare trees both, as also the Corke tree, their fruit is not to be gathered before winter begin. The Firre putteth forth a blossome of a yellow color like Saffron, about mid-Iune or the summer sun-stead; bt the Brood-hen star is downe before the fruit be ripe. The Pine, and Pitch tree, do bud before the Firre some fifteen daies, or thereabout; and it is winter first, but the foresaid Vergiliæ or Brood-hen is likewise set, before their fruit is ripe. Citron trees, Iunipers, and mast-Holmes, are counted trees that beare all the yeare long, and the old fruits of the former yeare tarieth on the tree vntill new come, and they hang both together. But aboue all other trees, the Pine is a wonder in nature; for a man shall e-
E uer find vpon it some of the fruit readie to be ripe; and some againe that will remaine vnto the next yeare, and the third yere before it will be readie: and there is not another tree that is more forward and greedie (as it were) to put forth it selfe, and giue greater hope of increase, than it doth: for look in what month soeuer the Pine-nuts are gathered from the tree, in the very same others are in good forwardnesse of ripening; and in such sort she ordereth the matter, that euery month a man shall haue ripe fruit on her. Those Pine-apples or nuts which cleaue and open vpon the tree, bee called Zamiæ; and well may they be so named, for vnlesse they be plucked, they hurt and corrupt the rest. The only trees that bear no fruit at all, that is to say, not so much as seed, are these; the Tamariske, good for nothing but to make Beesoms of; the Poplar, Alder, Atinian Elme, and the Alaternus, which hath leaues resembling the Holme, and partly the O-
F liue. As for such trees which neither at any t me are set or planted, nor yet beare fruit, they bee holden for vnfortunate, accursed, and condemned, in such sort, as there is no vse of them in any sacrifice or religious seruice. *Cremutius* writeth, That the (Almond) tree whereon ladie *Phyllis* hanged her selfe, had neuer (after) greene leaues on it. Such trees as yeeld gum, after they haue put forth their bud, do cleaue and open: howbeit the gum that issueth out, neuer commeth to a-
ny thicknesse, vntill the fruit thereof be gathered. Yong trees commonly beare not so long as

they shoot and grow. The Date tree, the fig tree, the Almond tree, the Apple tree, and the Pyrrie, do sooneſt of all other let their fruit fall before it be fully ripe. Semblably, the Pomegranat tree, which is ſo tender beſides, that with euery thicke and heauie dew, white froſt, and foggie time, ſhe will be bitten & ſhed the bloſſom: which is the cauſe that folk vſe to bend the boughs thereof downeward to the ground, that both dew and rime may ſooner fall off which lights vpon them, and otherwiſe would ouer-load and hurt them. The Pyrrie and the Almond tree cannot abide cloſe and cloudie weather, eſpecially if the wind be Southerly, although no raine do fall: for in ſuch daies, if they chance to bloſſom, they not only ſhed their flowre, but loſe their fruit new knit. But the Sallow or Withie tree, is of all others moſt tickliſh, and ſooneſt forgoes the ſeed or chats that it beareth before it commeth to any ripenes: for which cauſe, called it is of *Homer* * Looſe-fruit, or Spill-fruit. Howbeit the age enſuing (naught as it was) hath interpreted that Epithet of his, in another ſenſe, according to the wicked experience they had of it, whereby it was found, that the ſeed therof cauſeth barraineſſe in women, and hindreth conception. But in this regard, Nature hath well done alſo to preuent this miſchiefe and inconuenience, in that ſhe hath not been very carefull to preſerue the ſeed: and yet for the maintenance of the whole kind, ſhe hath endued it with this gift, To grow very quickly, if a man do pricke into the ground but a cutting or twig thereof. And yet (by report) there is one Willow in Candie, and namely about the very deſcent of *Iupiters* caue, which is wont ordinarily to carie the graine or ſeed thereof vntill it be full ripe, and then is it of a rough and writhen ſhape, of a wooden and hard ſubſtance, and withall, of the bigneſſe of a cich peaſe.

* Oleagnea, Oleaſter, Fungiperda.

Moreouer, ſome trees there be that proue barraine and fruitleſſe by the occaſion of the imperfection of the ſoile and territorie where they grow: and, namely in the Iſle Paros, there is a whole wood or coppiſe that vſually is lopt and cut, but it neuer beareth any fruit. The Peach trees in the Iſland Rhodos bloſſome only, and otherwiſe are fruitleſſe. Ouer and beſides, this difference of trees (that ſome be fruitfull and others barraine) ariſeth of the ſexe alſo; for commonly the males beare not: how ſoeuer ſome affirme cleane contrary, and ſay, They are the male only that be fruitfull, and the female barren. Furthermore, it falleth out many times that trees be fruitleſſe, either becauſe they grow too thick one by another, or elſe are ouercharged and too ranke with boughes and branches: but of ſuch as do beare, ſome bring forth their fruit both at the ſides, and alſo at the very tips and ends of their branches; as the Peare tree, Pomegranate tree, Figge tree, and Myrtle. As for others, they are of the nature of corne and pulſe; for the one grows in the eare or ſpike alone, the other by the ſides, & not otherwiſe. The Date tree onely (as hath been ſaid before) containeth fruit within certain pellicles, and the ſame hangeth down in cluſters after the manner of grapes. Other trees beare their fruit vnder the leaſe for their ſafeguard and defence, except the Fig tree, which hath her Figs aboue the leaf, becauſe it is ſo large and ouerſhadowie. Moreouer, the leaſe of the fig tree commeth forth after the Figge. One notable thing is reported of a kind of figge-trees in Cilicia, Cyprus, and Hellas, to wit, that they haue this propertie ſingular by themſelues, To bring forth their perfect Figs vnder leaſe, and their greene abortiue Figs that come to no proofe, after the leaſe. The Fig tree beareth moreouer certain haſtie Figs, which the Athenians call Prodromos, *i.* vant-courriers or forerunners, becauſe they be long ripe before others. The Laconian Figge trees bring the faireſt and greateſt Figs.

Chap. XXVII.

¶ *Of trees that beare twice and thrice in one yeare. Alſo what trees ſooneſt wax old: and of their ages.*

IN the ſame countries aboue-named, there be Figge trees alſo that beare Figges twice in one yeare. And in the Iſland Cea, the wild Figge trees beare thrice in the ſame yeare: for the ſecond increaſe is put forth on the firſt, and the third vpon the ſecond: and by this third fruit, the Figges of the tame Figge tree receiue their maturitie by way of caprification: and thoſe wild greene Figges of theirs come forth aboue the leaſe. Moreouer, there be ſome Pyrries and Apple trees that bring forth fruit twice a yeare: as alſo there be others of the haſtie kind, which do beare both Peares and Apples betimes in the yeare. There is a kinde of Crab tree alſo or Wilding, that in like manner beareth twice a yeare; and the later fruit is ripe preſently after

after the midſt of September, eſpecially in places lying well vpon the Sun. As touching Vines, there be of them alſo, that after a ſort beare three times in the yeare, which thereupon men call Inſanas, [*i.* The mad or fooliſh vines:] for whiles ſome of the grapes be ripe, others begin to ſwel and wax big, and a third ſort againe are but then in the flower. *M. Varro* writeth, That in Smyrna by the ſea ſide there was a vine that bare fruit twice a yeare, as alſo an Apple tree in the territorie of Conſentia. But this is an ordinary thing throughout all the countrey about Tacapa in Africa, and neuer is it ſeen otherwiſe there, ſo fertile is the ſoile; but thereof will wee write more at large hereafter in another place. As for the Cypreſſe trees, they faile not but come with fruit thrice in one yeare: and their berries be gathered in Ianuarie, May, and September, and all of a diuers bigneſſe, one from the other. Ouer and beſides, the very trees themſelues are not laden with fruit after one and the ſame manner: for the Arbut or Strawberry tree is more plenteous in the head, and toward the top: the Oke, the Wal-nut-tree, Fig-tree (and namely that which beareth the vnſauorie great figs Mariſcæ) are more fruitfull beneath. Generally, all trees the elder they are, the ſooner they beare and make more haſt to ripen their fruit; the rather alſo if they grow in a ground leane, and expoſed to the Sun. Contrariwiſe, trees that be wild are later in bearing than other: and ſome of them neuer yeeld fruit fully ripe. Moreouer, ſuch trees vnder which the ground is tilled & laid hoilow, haue their fruit ſooner ripe, & are more fruitful withall, than thoſe that are neglected and not looked vnto. Beſides all this, there is a difference in trees as touching bearing their fruit, according to the age: for the Almond tree & the Pyrrie are, moſt fertile when they be old, as alſo maſt trees, and a certain kind of fig-trees. Al others, the yonger they are, the more fruitfull they be, howbeit, later it is, ere their fruit be ripe: a thing moſt plainly to be obſerued in Vines. For the better wine commeth from the elder Vines: but more plenty from the yonger. As for the Apple-tree, it becommeth of all other ſooneſt old, and in that age the fruit is nothing ſo good as in youth: for both leſſer be the Apples, and alſo more worm-eaten, inſomuch as the very wormes will breed in them vpon the tree. The Fig is the fruit alone of all trees, that needeth ſome help of * Phyſicke to ripen. And this may be noted for a ſtrange and miraculous thing in them, That the later figs bee in more price than the haſty and early ripe, and that there ſhould be more reckoning made of prepoſterous and artificiall things beſide the courſe of kind, than of the naturall. Alſo this is a generall rule, Whatſoeuer tree is exceeding fruitful, and beareth moſt, the ſame continueth leaſt while, and ſoon waxeth old. Yea and ſome of them are to be ſeen to die out right, and that very quickely, becauſe they inioyed ſo fauorable a ſeaſon, to cauſe them ſo to ſpend themſelues with bearing; as wee may marke moſt eaſily in Vines.

* To wit, by caprification.

Chap. XXVIII.

¶ *Of the Mulberrie tree.*

COntrariwiſe, the Mulberry tree laſteth long, and is very late ere it ſeemeth old. For why? it is not giuen greatly to beare fruit, neither is ouerloden with Mulberries. To conclude, look what trees haue a curled graine in the wood, as the Maple, Date-tree, and Poplar, they continue a long time before they decay. And in one word, ſuch as haue their roots digged or delued often and laid bare about, are not long liued, but ſoone age and decay.

Chap. XXIX.

¶ *Of wilde trees.*

AS for wilde trees, they indure longeſt of all others. And generally, as carefull tending and looking to trees, maketh them more fertile: ſo there is nothing ſooner bringeth age vpon them, than fruitfulneſſe and much bearing. Hereupon it is likewiſe, that ſuch trees both bud and alſo bloſſome ſooner than others, yea, and ordinarily their fruit is ripe before the reſt: in regard wherof, they are more ſubiect to the iniury of the time & the weather, which cauſeth alſo diuers and ſundry infirmities. Moreouer, as we haue ſaid already in the chapter of maſt trees, there be many that bring forth fruits of different ſorts: among which may be reckoned the Lawrell, with her variable floures and berries growing ſo thicke, and principally the barren of that kind which beareth nothing els, and therfore is eſteemed of ſome the male. The Hazels alſo

so and Filbard trees, besides, their nuts do carry certain chats with a callous substance of skales G
joined one within another, but good for nothing.

Chap. XXX.

¶ *Of the Box-tree: the Greeke Beane or the Lotus.*

If this *Theophrastus* report, both of Ilex, and not of Buxus.

AMong these is to be ranged the Box-tree, which bringeth forth the most varietie of all others. For it putteth forth a seed of her owne, also, a graine which they call Carthegon: besides, on the North side Misselto, and on the South Hyphear: whereof wee will write a-none more at large: so that otherwhiles a man shall find foure diuers things vpon the Box all together. H

Moreouer of trees, some be simple or single, to wit, such as from the root haue one trunke or body, and no more, and yet many boughes and branches; as the Oliue, Fig-tree, and the Vine: others be of a shrubs kind, and put forth many shoots from the root besides the main trunk, as the Rhamne-thorn Paliurus, and the Myrtle. In like maner the Hazell nut-tree. Howbeit, the better is the tree and more plenteous in fruit, when it is well branched from the body, and hath not those suckers from the root: ye shall find some again haue no principall stock at all, as wee may see in a kind of Box, and a certain Lotus beyond sea. Others be forked in twain, yea in fiue, immediatly from the root: and ye shall meet with those that put vp many trunks out of the earth, but branch not into boughes, as namely, the Elders; as also with others that forke not, nor are diuided at all, howbeit, they be ful of arms & boughs, as the Pitch-trees. Moreouer, some there be which haue their boughes disposed in good order, as the Pitch-tree, Firre, or Deale: others I
again be as disorderly, as the Oke, Apple-tree, and Pyrrie. As for the Fir verily, where it is diuided into boughs, they grow directly vpright vnto heauen, and spread not in breadth about the sides. But a strange and wondrous thing it is of this tree, that if it be headed, or the tops only of those arms cut off, the whole dieth thereupon: but if they be lopped off close to the body, it continueth still aliue. Nay, in case it be cut vnder the place where the branches put forth, the stock or stump that is left, will take no harme by it, but remaine and liue: crop the head onely thereof, and the whole tree dieth. To proceed, some trees spread into arms immediatly from the root, as the Elme: others branch only toward the top, as the Pine, and the Greek Bean, which at Rome for the pleasant taste of the fruit, resembling cherries very much, although it be of a wild nature, they call Lotus. This tree is much planted about faire houses, in the court yards, espe- K
cially because the boughs spread so large; for albeit the stock or body it selfe be but very short and small, yet it brancheth so, as that it yeeldeth much shade: yea, and often times the boughes reach to the neighbor housen. But there is not a tree againe that maintaineth this shade a lesse while; for when Winter is once come, the leaues shed, and then it admitteth the warm Sun for it. Moreouer, there is not another tree that beareth a fairer barke, nor more pleasant to the eie, nor that carieth either longer boughes, and more in number than it, or stronger: a man that seeth them, would say they were so many trees by themselues. As touching the vse and commodities of this tree, the barke serueth to colour skins and leather: the root to die wooll. And as for the fruit or Apples that it beareth, they are a speciall kind by themselues: for all the world they re-
semble the shouts or muzles of wild beasts, and many of the smaller sort seeme to hang to one L
that is bigger than the rest.

As concerning boughs of trees, some are termed blind, because they put not forth certaine eies or chits where they should bud: which happeneth somtime by a naturall defect, when they are not of validity to thrust out a bud; otherwhiles it is occasioned by some wrong and iniurie done, namely, when they be cut off, and in the place of the cut, there groweth as it were a callous skar that dulleth the vertue of the tree. Furthermore, looke what is the nature that forked trees haue in their boughes, the same hath the Vine in her eies and burgeons; the same also haue canes and reeds in their joints and knots. Ouer and besides, all trees toward their root, and the neareſt to the ground, are thicker than else where. Some run vp altogether in height, and therein shew thrir growth, as the Firre or Deale tree, the Larch, Date-tree, Cypresse, Elme, and generally all M
that rise vp in an entire stocke, and are not diuided. Of those also that branch and put out many boughes, there is a kind of Cherry-tree that is found to beare armes like beames forty cubites long, and two foot in thickneſſe square throughout the whole length.

Chap.

A

Chap. XXXI.

¶ *Of the Boughes, Barke, and Roots of trees.*

THere are trees, that immediatly from the root thrust out boughes and branches, as do the Apple-trees. Some be couered with a thin rind, as the Lawrell and Line-tree: others with a thicke barke, as the Okes. In some a man shall find the barke euen and smooth, as in the Apple-tree, and fig-tree; the same in others is rough and rugged, as is to be seene in Okes and Date-trees. And ordinarily, all old trees haue more riueled barks and furrowed, than the younger. In many trees the bark naturally doth breake and cleaue of the own accord, and namely in the Vine. From some it shaleth and falleth off, as from the Apple tree and the Arbut. The cork
B and the Poplar haue a fleshie and pulpous barke: the rind of the Vine and the Reed, is made in manner of a membrane or thin skin. In Cherry trees it is as slender as paper, and runneth into rolls: but Vines, Lindens, and Firs, are clad with tunicles and coats of many folds. In some again the rind is but single, as in the Fig-tree, and the Cane or Reed. And thus much of Barke.

There is as great difference in the root. For the fig-tree, the Oke, and the Plane, haue great store of roots and large spurns: contrariwise, in the Apple tree they are short and small: the firre and Larch haue one tap root and no more: for vpon that one main master-root they rest and are founded; howbeit, many small strings and petie spurns shoot out of the sides. In the Bay-tree the roots be more grosse and vnequally embossed, and likewise in the oliue, which also spredeth out into many branches. But those of the oke be of a carnous substance: and verily, all the kind
C of okes do root deep into the ground. Certes, if we giue credit to *Virgil*, that sort of them which are called Esculi, go down as deep into the earth with their roots, as they arise & mount aboue ground with their heads. The roots of the Apple-tree, Oliue, and Cypresse, lie very ebbe, and creep hard vnder the sourd of the ground. Moreouer, there be roots that run direct and streight, as those of the Bay and Oliue: there be againe that wind and turne as they go, as those of the fig-tree. Some are all ouergrowne and full of hairy strings, as the firre-root, and many others of wild trees that grow in forrests: from which the mountains vse to pluck those fine fibers & smal threds, wherewith they twist goodly faire paniers, couers for flaggons and bottels, and work many other vessels & prety deuises. Some writers [as namely *Theophrastus*] hold opinion and haue
D put down in their books, that no roots goe lower into the earth, than that the Sunnes heat may pierce vnto them and giue them a kind warmth; the which is more or lesse, say they, according to the nature of the soile, as it is either lighter or lean, or massier, richer, and faster compact. But I take this to be a meere vntruth. This is certain, that we find in antient writers, that a yong Fir, when it was to be transplanted and set again, had a root that went eight cubits within the earth; and yet it was not digged vp all whole, but broken in the taking vp, and left somewhat behind. The roots of Citron trees are biggest of all other, and spread most. Next to them are those of the Planes, Okes, and other Mast-trees. Some trees there be, the roots wherof like better & liue longer, the more ebbe that they lie within the vpper face of the ground, and namely, Lawrels; and therefore they spring fresh againe, and put forth better, when the old stock is withered and cut away. Others hold, that trees which haue short stumped roots, do sooner decay, & liue lesse
E while. But deceiued they are, and may be reproued by the instance of fig-trees, which liue least while, and yet their roots are longest of any other. I suppose this also to be as false, which some haue held and deliuered in writing, That the roots do diminish and decay, as the trees do waxe old; for the contrary hath bin seen by an aged oke, which by the violent force of a tempest was ouerthrowne, the root whereof tooke vp a good acre of grouud in compasse.

Moreouer, a common thing it is and ordinary, to replant and recouer many trees that haue bin blown down and laid along; for they will reioine, knit againe, and reuiue, by meanes of the earth, euen as a wound doth vnite by the solder of a callous cicatrice. And this is a most vsuall and familiar practice obserued in the Planes, which by reason of their great heads so thicke of boughes, gather windes most, and are sooneſt subiect to their rage: if any one of them by that
F means be fallen, they lop their boughes, and discharge them of their weighrie load, and then set them vpright again in their owne place, as it were in a socket, and they will take root and prosper. And in good faith, this hath bin done heretofore already in Walnut trees, Oliues, and many other, to the like proofe.

CHAP.

Chap. XXXII.

¶ Of certaine prodigious trees, and presages obserued by them. By what meanes trees grow of their owne accord. That all plants grow not euery where: and what trees they be that are appropriate to certaine regions, and are not elsewhere to be found.

WE reade in Chronicles and records, that many trees haue fallen without wind and tempest, or any other apparent cause, but only by way of prodigie and presage of some future euent: and the same haue risen againe of themselues without mans helpe. This happened during the wars against the Cymbrians, to the great astonishment of the people of Rome, who thereupon gathered a fore-tokening of great consequence: for at Nuceria in the groue of *Iuno*, there was an old Elme fell, and after the head was lopped off, because it light vpon the very altar of *Iuno*, it arose of it own accord; and that which more is, immediatly vpon it put forth blossoms and flourished. And this was obserued, That from that very instant, the majesty of the people of Rome began to take heart, reuiue, and rise again, which had bin decaied and infeebled by so many and so great losses that the Romans hed receiued. The like chanced (by report) neer the city Philippi, vnto a Willow tree which was fallen downe, and the head of it cut off clean: semblably, to an Aspen tree at Stagyræ, neere vnto the colledge or publik place of Exercise there. And all these were fortunate presages of good luck. But the greatest wonder of all other was this, of a Plane tree in the Isle Antandros, which was not only fallen, but also hewed and squared on all sides by the Carpenter; and yet it rose againe by it selfe, and recouered the former greennesse and liued, notwithstanding it bare 15 cubits in length, & foure elnes in thicknesse and compasse.

All trees that we are beholden vnto the goodnesse of Nature for, we haue by 3 means: for either they grow of their owne accord, or come of seed, or else by some shoot springing from the root. As for such as we inioy by the art and industry of men, there be a great number more of deuises to that effect: whereof we will speake apart in a seuerall booke for that purpose. For the present our treatise is of trees that grow in Natures garden onely, wherein she hath shewed her selfe many waies after a wonderfull manner, right memorable.

First and formost, as we haue shewed and declared before, euery thing will not grow in euery place indifferently: neither if they be transplanted, will they liue. This happeneth sometimes vpon a disdaine, otherwhiles vpon a peeuish forwardnesse and contumacie, but oftner by occasion of imbecility and feebleness of the very things that are remoued and transplated; nay, one while the climate is against it, & enuious; otherwhiles the soile is contrary thereunto. The balm tree can abide no other place but Iury. The Assyrian Pome-citron tree will not beare elsewhere than in Syria. As for the Date-tree, it scornes to grow vnder all climats; or if it be brought to that passe by transplanting, it refuseth to beare fruit. But say, that it fortune by some meanes, that she giueth some shew and apparance of fruit, she is not so kind as to nourish and reare vp to perfection, that which she brought forth, forced against her will. The Cinnamon shrub hath no power and strength to indure either the aire or earth of Syria, notwithstanding it be a neere neighbor to the naturall region of her natiuity. The daintie plants of Amomum or Spike-nard, may not away with Arabia, howbeit they be brought out of India thither by sea: for king *Seleucus* made triall therof: so strange they are to liue in any other country but their own. Certainly, this is a most wonderful thing to be noted, That many times the trees for their part may be intreated to remoue into a forrain country, and there to liue; yea, and otherwhiles the ground and soile may be persuaded and brought to accord so wel with plants (be they neuer such strangers) that it will feed and nourish them; but vnpossible it is to bring the temperature of the aire and the climat to condiscend thereto and be fauourable vnto them. The Pepper-trees liue in Italy, the shrub of Casia or the Canell likewise in the Northerly regions; the Frankincense tree also hath been knowne to liue in Lydia: but where were the hot gleames of the Sunne to bee found in those regions, either to dry vp the waterish humor of the one, or to concoct and thicken the gumme and Rosine of the other? Moreouer, there is another maruell in Nature, well neare as great as that, namely, that shee should so change and alter in those same places, and yet exercise her vertues and operations otherwhiles againe, as if there were no change nor alteration

A ration in her. She hath assigned the Cedar tree vnto hot countries: and yet wee set it to grow in the mountaines of Lycia and Phrygia both. She hath so appointed and ordained, that cold places should be hurtfull and contrary to Bay-trees, howbeit, there is not a tree prospereth better, nor groweth in more plenty vpon the cold hill Olympus, than it. About the streights of the Cimmerian Bosphorus, and namely, in the city Panticapæum, both K. *Mithridates*, and also the inhabitants of those quarters, vsed all meanes possible to haue the Lawrel and the Myrtle there to grow, only to serue their turns when they should sacrifice to the gods: it would neuer be, did they what they could: and yet euen then, there were good store of trees there growing of a warm temperature; there were Pomegranates and Fig-trees plenty; and now adaies there be Apple-trees and Pyrries in those parts, of the best and daintiest sort. Contrariwise, ye shall not find in B all that tract any trees of a cold nature, as Pines, Pitch-trees, and Firres. But what need I to goe as farre as to Pontus for to auerre and make good my word? Goe no farther than Rome, hardly and with much adoe will any Chestnut or Cherrie trees grow neere vnto it, no more than Peach-trees about the territory of Thusculum. And worke enough there is to make hazels and filbards to like there: turne but to Tarracina thereby, ye shall meet with whole woods full of Nut-trees.

Chap. XXXIII.

¶ Of the Cypresse tree. That oftentimes some new plants do grow out of the ground, which were neuer knowne to be there beforetime.

C THe Cypresse hath bin counted a meere stranger in Italy, & most vnwilling there to grow, as we may see in the works of *Cato*, who hath spent more words, and made oftner mention of the Cypresse alone, than of all other trees whatsoeuer. Much ado there is with it before it come vp; and as hard it is to grow, and when all is done, the fruit is good for nothing. The berries that it beareth, be wrinckled, and nothing louely to the eie; the leaues wherewith it is clad, bitter in tast; a strong and violent smell it hath with it, not so much as the very shade thereof is delectable and pleasant; and the wood but small & not solide, but of an hollow substance, insomuch, as a man may range it among the kinds of shrubs. Consecrated is this tree to *Pluto*, & therefore men vse to set a bough thereof as a signe, before those houses wherein a dead corpes D lieth vnder bourd. As touching the female Cypresse, it is long ere shee beareth. The Cypresse tree for all this, in the end growing vp to a pyramidall forme sharp pointed, is not reiected but much set by, if it were for nothing els but to stand between euery row and ranke of Pine-trees: howbeit, now adaies it is ordered with cutting and clipping for to grow thick in borders about garden-quarters along the allies, also to climbe vpon walls in manner of seeling: and being thus kept down, it is by this means alwaies small and tender. Moreouer, thereof are drawne many vinets and borders about story-works in colours: for so fine is the leafe, so short and green withal, that it may be brought in a traile to winde about pictures either of hounds and hunters, or of ships and sailers, or any counterfeits and images whatsoeuer most daintily.

Two sorts there are of the Cypresse tree. First that which runneth vp into a pyramidal point, E winding vpward as a round spire, which also is called the female. As for the male, it sendeth out branches, and spreadeth broad: it is lopped also, and serueth in frames to beare vp vines. Both the one and the other is suffered to grow for perches, railes, and plankes, to be made of their boughes when they are cut. Once in thirteen yeares there is made a fall, and not one of those but are sold for a Roman denier apiece. A wood thereof planted in this manner, is of all others most gainfull, and yeeldeth greatest profit: insomuch, as in old time they were wont commonly to say, That one fall of such Cypresse poles would yeeld a man a portion sufficient to giue with his daughter in mariage.

The Island Candie is the naturall countrey of the Cypresse tree, howsoeuer *Cato* hath called it a Tarentine tree: haply, because it came thither first. In the Isle Ænaria, the Cypresse trees F spring againe after they be cut downe to the roots. But in Candie, looke what ground soeuer a man doth breake vp and plough, vnlesse he sow or set it with some other thing, Cypresses will come vp, and presently shew aboue ground. In many places also of that Isle, they spring and grow of themselues, euen in ground otherwise vntilled; and principally in the mountaines of Ida, and those which they cal the white Hils: vpon the very crests and tops wherof, which are alwaies

alwaies couered with snow, they are to be seen in greatest plenty. A wonderfull thing, consider- G
ring that in all other places they loue warmth, and without it, will not grow: and besides, when they haue met with a familiar ground vnto them, yet they care not much for it, but disdaine so kind a nourse: whereby a man may see, that not onely the nature of the soile, and the ordinarie power of the climat serueth much for these plants, but also certain sudden and temporarie impressions of the aire do wonderfully worke in this case: for some showers there be, that oftentimes do bring seeds with them and ingender plants. The same rains do fall somtime after one certain manner, otherwhiles also in such strange sort, as men are able to giue no reason thereof: A thing that befell the country about Cyrene in Barbary, at what time as the herbe Laserpitium (which beareth the gum Benjoine) grew there first: as hereafter we will write more at large in our treatise of herbes. Moreouer, about the 430 yere after the foundation of Rome city, there H
sprung vp a very forest or wood neere vnto the same city, by reason of a certaine thick and glutinous shoure like to Pitch, that then fell.

Chap. XXXIIII.

¶ *Of Ivie.*

IT is said, that now the Iuie tree groweth also in Asia: and yet *Theophrastus* in his time deliuered the contrary, and affirmed, that neither it was to be found there, nor yet throughout all India, but only vpon the mount Merus. Ouer and besides, it is reported, that *Harpalus* did what he could to store the country of Media therewith, but all in vaine. And as for *Alexander* the I
Great, when he returned from out of India with victory, for the rareneſſe thereof he would haue all his soldiers go in a sumptuous shew, wearing chaplets therof vpon their heads; resembling herein prince *Bacchus*, in solemnities and high feasts of which god, the people of Thracia euen at this day are furnished from this tree, and do with Ivie set out and garnish the heads of their launces, pikes, and iauelins, their mourrons also and targuets.

An enemy is Ivie doubtlesse to trees, and generally to all plants and sets what soeuer: it cleaveth and breaketh sepulchres built of stone, it vndermineth city walls; good onely to harbour serpents, and most comfortable for their cold complexions: so that I cannot chuse but maruell much that it should be honored at all, and accounted of any worth. But to enter into a more particular consideration and discourse of Iuie, two principall kinds are found therof, like as of K
all other trees, to wit, the male and the female. The male is described to be a more massiue and greater body, to be clad with a harder and fattier leafe, and to shew a flower inclining to purple: and yet the flower of them both, the male as well as the female, doth resemble that of the wild Rose or Eglantine, saue that it hath no smell at all. These generall kinds containe each of them three particular sorts: for there is the black and the white Iuie, and a third besides named Helix: and yet we must admit other subdiuisions of these also: for of the white, there is one sort that beareth white fruit only, and another that hath white leaues withall: moreouer, of such as carry only white fruit, one kind hath big berries growing thick together, and bunching round in maner of grapes, which clusters be called of the Greeks and Latines Corymbi. A second sort there is of the white Iuie named Selenitium, which beareth smaller beries, and those not so close set L
and thick couched together. Semblably, it is to be said of the black: for there is an Iuy that beareth also a black grain or seed: another with a fruit of a Saffron colour; and hereof are the garlands made which Poets weare: some call it Nysia, others Bacchica: the leaues of it are not altogether so blacke, but it beareth the greatest bunches and biggest berries of all the black kind. And verily of this Iuie there be some Greeke writers that make two sorts, according to the diuers colors of the berries: for the one they call Erythranus [*i.* the red;] & the other Chrysocarpos, as one would say, the golden berry-Iuie. Now as touching the rampant or climbing Iuie, Helix, there be many and sundry sorts thereof, differing in their leafe especially: for first & formost the leaues of this Iuie are small, cornered, and better fashioned than the rest, which indeed are but of a plain and simple making. There is a difference likewise in the length between euery M
knot and ioint, but especially in this, that it is barren and beareth no fruit at all. And yet some there be, who attribute that to the age, and not to a seuerall kind of Iuie by it selfe; saying, that the same which at first was Helix, and clasped trees, in tract of time changed the leafe and became a very Iuie tree: but fouly they are deceiued, and disproued plainly they may be by this,

That

A That of the said clasping Iuie Helix, there be many kinds, and three principall aboue the rest. The first, of grasse greene colour, which groweth most common: the second, with a white leafe: and the third, called also the Thracian Iuie, which hath leaues of diuers colours. The foresaid greene Iuie is fuller of leaues, and those finer and set in better order than in others; whereas the contrary is to be seen in the white kind: also in the third sort with variety of colours, some haue smaller and thinner leaues, couched likewise in good order, and thicker growing, whereas in the middle kind, no such thing may be obserued. Ouer and besides, the leaues of Iuie are bigger or lesse, spotted also and marked; in which regard one differeth from another. Among the white Iuies, some be whiter than other. The green Iuie groweth most of all others in length: the white killeth trees, for by sucking and soking al the sap and moisture out of them, it feedeth and thri-
B ueth so wel it selfe, that it becommeth in the end as big as a tree. A man may know an Iuie being come to his perfection by these signes: the leaues are very big and large withal; the tree putteth forth yong shoots straight, whereas in others they be crooked and bend inward: the berries also stand in their clusters directly vpright. Moreouer, whereas the branches of all other Iuies be made like vnto roots, this hath boughes strong and sturdy aboue the rest; and next vnto it, the black kind: howbeit this property hath the white Iuie by it self, that amid the leaues it putteth forth armes that clasp and embrace the tree round on euery side: which it doth vpon walls likewise, although it cannot so well compasse them. And hereupon it is, that although it be cut asunder in many places, yet it continueth and liueth still: and looke how many such arms it hath so many heads likewise of roots are to be seen, whereby it maintaineth it selfe safe and sound;
C and is besides of that force, as to suck and choke the trees that it clasped. Furthermore, there is great diuersity in the fruit, as well of the white as the black Iuie. As for the rest, the berries of them are so exceeding bitter, as no bird wil touch them. And yet there is one kind more of Iuy, which is very stiffe and standeth alone of it selfe without any prop to beare it vp: and this of all others only, is therupon called Cissos or Iuie indeed. Contrariwise, Chamæcissos, [*i.* ground Iuie] is neuer knowne but to creep along the ground.

Chap. XXXV.

¶ *Of the Bind-weed or Iuie called Smilax.*

D LIke vnto Iuie, is that plant which they call Smilax, or rough Bind-weed. It came first out of Cilicia, howbeit more commonly it is to be seen in Greece: it putteth forth stalks set thicke with ioints or knots, and those thrust out many thornie branches. The leafe resembleth Iuie, and the same is small, and nothing cornered: from a little stele that it hath, it sendeth forth certain pretty tendrils to clasp and wind about: the floure is white, and smelleth like to a Lilly; it beareth clusters comming nearer to those grapes of the wild vine Labrusca, than to the berries of Iuie; red of color, wherof the bigger contain within them 3 kernels or pepins apiece, the smaller but one, and those be hard and black withall. This Smilax is not vsed in any sacri-
fices or diuine seruice of the gods, nor serueth for garlands and chaplets: for that it is held to be dolefull and ominous, or of an vnlucky presage, by occasion of a certain yong lady or Damo-
sell of that name, who for the loue of the young gallant and knight *Crocus*, was turned into this
E shrub or plant, retaining still her name: which the ignorant people not knowing, but taking it for a kind of Iuie, stick not to make coronets therof; profaning by that means many times their high feasts and sacred solemnities: and yet who wot eth not with what chaplets Poets are crowned, and what garlands prince *Bacchus* or *Silenus* vsed to weare? Of this Smilax are made certain manuell writing tables. And this property moreouer hath the wood thereof, That if a man hold it close to his eare, he shall heare it to giue a pretty sound.

But to return againe to the Iuie indeed, it hath (by report) a strange and wonderful vertue to trie wines, whether they be delaied with water or no: for make a cup of Iuie wood, and put wine therein to, all the wine will soke and run through, but the water (if any be mingled therewith) will tarry behind.

Chap. XXXVI.

¶ *Of Reeds, Canes, and other water shrubs.*

IN this discourse touching plants that loue cold places, it wil not be amisse to treat of those that grow in waters. Among which, the Reeds and Canes may be raunged in the first place:

* For Arrowes and Darts: * For writing pens. * For Flutes and Pipes.

for necessarie they be in time both of * war and * peace: they haue their vse besides; and are G
accepted among the * delightsom pleasures of this world. Moreouer, in the Northern regions,
the people vse therewith to couer and thatch their houses: and this kind of roofe will last many
ages, if it be laid with a thick coat, euen vpon high and stately houses. In other parts also of the
world, they are woont with it to make their arch-rouses, and hanging floores of most sleight
worke. As for Canes particularly, and those of Ægypt by name, which haue a certaine resem-
blance of the Papyr-reed in Nilus, they serue for writing Paper. Howbeit those of Gnidos, and
which grow in Asia along the lake or meere of Anaia, be held for the best. As for ours heere in
Italy, they are of a more spungeous substance and gristly matter, apt to sucke and drinke vp any
liquour. The same within-forth is full of holes and concauities, but conuerted aloft into a fine
wooddy rind, and in time becommeth drie, fast, and hard. Apt it is to cleaue, and the clifts euer- H
more carry with them a very sharp edge; and besides, it is full of ioints. Now this woodie sub-
stance being thus distinctly parted by knots, runneth alwaies euen and smooth, growing smaller
and smaller vntill it proue sharpe pointed in the top: with a head consisting of a good thicke
downe or plume, which serueth also to right good purposes: for either in stead of feathers they
vse to stuffe beds therewith in common Innes; or when it is growne hard and hath a slimie cal-
lositie about it, they in Picardie and those Nether-lands do stampe it, and therewith calfret or
calke the ioints of their ships, betweene the ribs and plankes: and herein it hath no fellow, for
it taketh faster hold than any glue, and for filling vp any rifts and chinks, no solder so strong, no
pitch so sure and trustie. Of Reeds, the Easterlings make their shafts; and archers they be that
fight their battels and determine all quarrels. These shafts they arme with sharpe barbed arrow I
heads in manner of fish-hooks, which wound with a mischiefe, because they cannot be drawne
out of the body againe: and to make these arrowes flie the faster and kill more presently, they
set feathers vnto them. Now say that a shaft be broken as it is set fast in the body, that end with-
out the flesh wil serue againe to be shot: & so inured are the people in those parts to these kind
of weapons, so practised withall in discharging of them so nimbly, that a man seeing how thick
the shafts flie in the aire, would say they were a cloud of arrowes that shadowed the very Sun.
And therefore when they goe to battell, they wish euer for faire weather and Sunne-shine
daies. Windes and raine, as most aduerse vnto their warres, they cannot abide: then are they
quiet and rest in peace, ful sore against their wils, because their weapons at such a time wil not
serue their turne. Certes if a man would fall to an exact reckoning and estimate of Æthyopi- K
ans, Egyptians, Arabians, Indians, Scythians, and Bactrians, of so many nations also of the Sar-
matians, and other East-countries, together with all the kingdomes of the Parthians, bee
should finde, that the one moietie or halfe of the world hath been vanquished and conquered
by the meanes of arrowes and darts, made of Reedes. The Candiots aboue all others, were so
readie and perfect in this kinde of feat, that the ouerweening of their owne skill, and the con-
fidence which they had in this manner of seruice, made them too bold, and was in the end their
owne ouerthrow. But herein also, as in all other things else whatsoeuer, Italie hath carried the
name, and woon the prize: for there is not a better Reed growing for to make shafts, than that
which is found about the Rhene, a little riuer running vnder Bononia: very full of marrow or
pith; stiffe also it is and weightie withall, it cutteth the aire, it flyeth away most swiftly: and last L
of all, it will hold the owne and stand in the weather so counterpoised, that no winde hath any
power on it. And those Reeds in Picardie and the Low-countries, are nothing comparable: ne
yet of Candie, how highly soeuer they be commended for warre-seruice. And yet the Reeds
that grow in India be preferred before them, and beare the name, which indeed some thinke to
be of another nature, consider ing they bee so firme and bigge withall, that beeing well headed
with yron, they serue in stead of Speares and Iauelins. In very truth, the Indian Canes for the
most part, grow to the bignesse of Trees, such as we see commonly in Temples, standing there
for a shew. The Indians doe affirme, that there is a difference amongst them also, in regard of
sexe: and namely, That the substance and matter of the male, is more fast and massie: but that
of the female, larger and of greater capacitie within. Moreouer, (if wee may beleeue their M
words) the verie Cane betweene euery ioint, is sufficient to make a boat. These great Canes do
grow principally along the riuer Acesine. All Reeds in generall, doe shoot and spring in great
number from one root and principall stocke: and the more they bee cut, the better they come
againe. The root liueth long, and without great iniurie offered vnto it, will not die: it also is di-
uided

A vided into many knottie ioints. Those onely of India, haue short leaues. But in all of them, the leafe springeth out of the ioint, which embracing the Cane, doth clad it round about with certaine thin membranes or tunicles, as far as to the middle space between the ioints; and then for the most part they giue ouer to clasp the Cane, and hang downeward to the ground. As well Reeds as Canes, spread their leaues like wings round one after another, on either side vpon the very ioints, and that in alternatiue course alwaies very orderly; so as if the one sheath come forth of the right side, the other at the next ioint or knot aboue it, putteth out on the left, and thus it doth throughout by turnes. From these nodosities, otherwhiles a man shall perceiue as it were certaine little branches to breake foorth, and those bee no other but small and slender Reeds.

B Moreouer there be many kindes of Reedes and Canes: for some of them stand thicker with ioints, and those are more fast and solid than others, & small distance there is between the same: there be again that haue not so many of them, and greater space there is from the one to the other, and such Canes for the most part are of a thinner substance. Yee shall haue a Cane all full of holes within, called therupon Syringias; and such are very good to make whistles or smal flutes, because they haue within them neither gristly nor fleshy substance. The Orchomenian Cane is hollow throughout from one end to the other, and this they call Auleticus, or the pipe Cane, for as the former was fit for flutes, so is this better for great pipes. Now you shall meet with Canes also that stand more of the wood, & haue but a narrow hole and concauity within, and this is full of a spungeous pith or marow within-forth. Some be shorter, some longer than
C other: and where you haue one that is thin and slender, you shall spie a fellow to it more grosse and thicker. That which brancheth most, & putteth forth greatest store of shoots, is called Donax, and is neuer known to grow but in marishes and watery places (for herein also lieth a difference) and preferred it is far before the Reed that commeth vp in dry ground. The archers reed is a seuerall kind by it selfe (as we haue shewed before;) but of this sort, those in Candy haue the greatest spaces betweene euery ioint; and if they be made hot, they are very pliable, and will bend and follow which way soeuer a man would haue them.

Moreouer, Reeds are distinguished one from another by the leafe, not for the number, but the strength and colour. The leaues of those about Lacedæmon, * are stiffe and strong, growing *Varia, or Vericolor, mixta, Theoph. i. of diuers colours.
D thicker of the one side than of the other. And such as these are thought generally to grow a- long standing pooles and dead waters, far vnlike to those about running riuers: and besides, to be clad with long pellicles, which clasp e and climbe about the Cane higher aboue the ioint, than the rest doe. Furthermore, there is another kind of Reeds that groweth crooked and winding trauers, and not vpright vnto any height, but creeping low toward the ground, and spreading it selfe in manner of a shrub. Beasts take exceeding great delight to feed thereof, and namely, when it is young and tender, for the sweet and pleasant taste that it hath. Some cal this Reed Elegia.

Ouer and besides, there breedeth in Italy also among the fens, a certain salt some, named * A- *Calamachne.
E darca, sticking to the rind or vtmost barke of Reedes and Canes, onely vnder the verie tuft and head: passing good it is for the tooth-ach, by reason of the hot and caustick quality that it hath like to Senuie or Mustard-seed. As touching the Reed-plots about the Orchomenian lake, I must needs write more exactly, considering in what admiration they were in times past: for in the first place, they called that Cane which was the thicker and more strong, Characias; but the thinner and more slender, Plotia. And this verily was wont to be found swimming in the Ilands that floted in the said lake; whereas the other grew alwaies firme vpon the bankes and edges thereof, how farre soeuer it spred and flowed abroad. A third sort also there is of Canes, which they called Auleticon, for that it serueth to make flutes and pipes of: but this commonly grew but euery ninth yeare: for the said lake also kept that time just, and increased not aboue that terme; but if at any time it chanced to passe that time and to continue full two yeres together more than ordinary, it was holden for a prodigious and fearfull signe. The which
F was noted at Charonia, in that vnfortunate battell wherein the Athenians were ouerthrowne and defeated: and many times else is obserued to happen about Lebadia, namely when the Riuer Cephisus ariseth so high, that he swelleth ouer his bankes, and is discharged into the said lake. Now during that ninth yeare (whiles the inundation of the lake continueth) these Canes proue so bigge and strong withall, that they serue for hawking poles, and fowlers pearches:

and then the Greeks call them Zeugitæ. Contrariwise, if the water hold not ſo long, but do fal G
and return back within the yere, then the Reeds be ſmall and ſlender, named Bombyciæ. How-
beit the femals of this kind, haue a broader and whiter leafe, little or no down at all vpon them,
and then they are known by a pretty name and called Spadones, as one would ſay guelded. Of
theſe Reeds were made the inſtruments for the excellent cloſe muſick within-houſe: wherein, I
cannot paſſe with ſilence, what a wonderfull deale of paines and care they tooke to fit them for
their tune, and make them to accord: inſomuch, as we are not to be blamed but born withall, if
now adaies we chuſe rather to haue our pipes and hautboies of ſiluer. And in truth, to the time
of *Antigenes* (that excellent minſtrell and plaier vpon the pipe) all the while that there was no
vſe but of the plain muſick and ſingle inſtrument; the right time of cutting down & gathering
theſe Reeds for this purpoſe, was about September, when the ſigne Arcturus is in force: then
were they to haue a ſeaſoning and preparation for certaine yeares, before they would ſerue the H
turne; yea and then alſo much ado there was with them, and long practiſe and exerciſe they aſ-
ked, before they could be brought into frame and good tune: ſo as a man might wel ſay, that the
very pipes were to be taught their ſound and note, by meanes of certaine tongues or quills that
ſtruck and preſſed one vpon another; and all to giue contentment and ſhew pleaſure vnto the
people aſſembled at Theatres, according as thoſe times required. But after that muſicke came
once to be compound, and that men ſung and plaied in parts with more varietie and delight,
they began to gather theſe Reeds before mid-June, and in three yeares ſpace they had their per-
fection and grew to their proofe; then were thoſe tongues or holes made more wide and open,
for to quauer and change the note the better: and of ſuch, are the flutes and pipes made, which
be vſed at this day. But in thoſe times men were perſuaded, that there was a great difference in I
the parts of any Reeds for to ſerue theſe or thoſe inſtruments: in ſuch ſort, as that ioint which
was next vnto the root, they held to be meeter for the Baſe pipe that was fitted for the left hand;
and contrariwiſe for the Treble of the right hand; thoſe knots that were toward the head & top
of the Reed. Howbeit of all others, by many degrees were thoſe preferred which grew in the ri-
uer Cephiſus. Now adaies, the hautboies that the Tuſcans play vpon at their ſacrifices, be of
Box-wood; but the pipes vſed in plaies for pleaſure only, are made of the Lotos, of Aſſes ſhank-
bones, and of ſiluer. The beſt Fauſconers Reeds wherewith they vſe to chaſe foules, came from
Panhormus: but the Canes for angle-rods that fiſhers occupie, are brought out of Africk from
Abaris. The Italian Reeds & Canes be fitteſt for to make perches to lay ouer frames, & props
for to beare vp vines. Finally, as touching the ſetting of Reedes, *Cato* would haue them to bee K
planted in moiſt grounds, after they haue bin firſt delued & laid hollow with a ſpade; prouided
alwaies that the œlets ſtand 3 foot aſunder, and that there be wilde Sparages among, whereof
come the tender crops for ſallads; for thoſe like well and fort together with the Canes.

Chap. XXXVII.

¶ *Of the Willow or Sallow, eight kinds thereof: and what trees beſides the Willow are good for bindings. Alſo of Briers and Brambles.*

MOreouer (after the opinion of the ſaid *Cato*) it is good to plant Withies alſo about riuer
ſides, and neere to Reeds: for ſurely there is not more profit ariſing from any other tree of L
the waters, than from it; howſoeuer the Poplars are well liked and loued of the vines, and
do nouriſh the good wines of Cæcubum: howſoeuer the Alders ſerue in ſtead of rampiers and
ſtrong fences againſt the inundation and ouerflowing of riuers, withſtanding their forcible e-
ruptions; howſoeuer they ſtand in the waters as mures and wals to fortifie the banks, or rather
as ſentinels to watch and ward in the borders of country farms; and being cut down to the root,
do multiply the rather, and put forth many ſhoots and imps as heires to ſucceed. And to bigin
withall, of Sallowes there be many kinds: for ſome there be, that in the head beare perches of a
great length to prop and make trails for vines to run vpon: and the rind or skin as it were pilled
from the wood, is as good as a belt or thong to binde or gird any thing withall. Others againe
there are, and namely the red Willowes, which carry twigs and rods that are pliable and gentle M
to wind as a man would haue them; fit alſo for buildings. Ye ſhal haue of theſe Oſiers, ſome that
are very fine & paſſing ſlender, wherof are wrought prety baskets, and many other dainty deuiſes; others alſo that are more tough and ſtrong, good to make paniers, humpers, and a thouſand
other

A other neceſſary implements for country houſes, and to fit the husbandmen. Being pilled, they
are the fairer and whiter, more ſmooth alſo and gentle in hand, whereby they are excellent good
for the more delicate ſort of ſuch wicker ware, and better far than ſtubborn leather; but princi-
pally for leaning chairs, wherein a man or woman may gently take a nap, fitting at eaſe and re-
poſe moſt ſweetly. A willow, the more that it is cut or lopt, the better ſpring will it ſhoot at
root, and beare the fairer head. Let that which you cut or ſhred, be ſo little & ſhort withal, that
it reſemble a mans fiſt, rather than a bough, the thicker will it come again: a tree no doubt that
would not be ſet in the loweſt rank, but be wel regarded, how ſoeuer we make but baſe reckoning
thereof: for ſurely there is not a tree for reuenue and profit, more ſafe and certain; for coſt, leſſe
chargeable; and for iniury of weather, in better ſecurity. Certes, *Cato*, among the commodities
that commend a good ferm or manor, eſteemeth it in the third place, and preferreth the increaſe
B and benefit thereby, before the gain that groweth from oliue rows, corn fields, & good medows.
Yet hereof we muſt not infer, that we are not furniſhed with many other things which wil ſerue
for bands to bind withal; for we haue certain ſorts of Spart or Spaniſh broom, we haue Poplars,
Elmes, the Sanguine-ſhrubs, Birch, clouen Reeds, leaues of Cane; as for example in Liguria:
the cuttings alſo of the very Vine, and Briars, ſo their ſharp pricks be cut away, to tie withall;
yea and the Hazell wands alſo, ſo they be writhen and twiſted: wherein a man may ſee a wonder-
ful property, That a wood ſhould be ſtronger for to bind withal, when it is cruſhed and bruiſed,
than whiles it was entire and ſound. All theſe (I ſay) are good for bands, and yet the willow hath
a gift therein beyond all the reſt. The Greek willow is red, and commonly is ſliuen for to make
withs. The Amerian Oſier is the whiter, but more brittle, and ſoon wil crack, & therfore it is put
C to that vſe of binding: ſound and whole as it groweth, and not clouen through. In Aſia, they
make account of three ſorts of willows: the black, which they imploy to wind and bind withal,
ſo tough and pliant it is: the white, wherewith husbandmen make their wicker paniers and ba-
skets, with other ſuch veſſels for their vſe; as for the third, it is the ſhorteſt of all other, and they
cal it Helix or Helice. With vs alſo here in Italy, there be as many kinds, & thoſe diſtinguiſhed
by their ſeuerall names; the firſt, which is of a deep purple colour, they call the free oſier or wil-
low; and that is ſo good for bands: the ſecond, which is more thin and ſlender, is named Vitelli-
na, for *Vitellinam* rather, for the yellow colour of the yolke of egges; for the bright hew that it
hath: the third that is ſmalleſt of all three, is the French willow.

D To come now to the brittle Ruſhes that grow in marish grounds, which ſerue to thatch hou-
ſes and to make mats; and the pith whereof, when the rind is pilled, maketh wieke for watch-
candles, and funerall lights to burne by a dead corps, whiles it lieth aboue ground, they cannot
iuſtly be reckoned in the ranke either of ſhrubbes, or Brier-buſhes, and Brambles, ne yet of tall
plants growing vp with ſtems and ſtalks, no more than among Hearbes and Weeds creeping a-
long the ground; but are to be counted a ſeuerall kind by it ſelfe. True it is, that in ſome places
there are to be found ruſhes more ſtiffe, hard, and ſtrong, than in others. For not onely mariners
and watermen in the riuer Po do make ſailes thereof, but fiſhermen alſo of Affrick in the maine
ſea: howbeit they haing their ſailes, betweene the maſts, from maſt to maſt, after a prepoſterous
manner contrary to all other. The Moores alſo do couer their cottages with Bulruſhes: and ſure-
ly if a man looke neerly to the nature of them, they may ſeeme to ſerue for that vſe which the
E Papyr-reeds in the netherland of Ægypt are put vnto, about the deſcent and fall of the riuer
Nilus.

As touching Brambles, they may go among the ſhrubs of the water: ſo may the Elders alſo,
which conſiſt of a ſpungeous kind of matter, & yet cannot wel be counted among thoſe plants
which bee termed Fenels-gyants, or ſtorely the Elder ſtandeth more vpon the wood than they
do. The ſhepherds are verily perſuaded, that the Elder tree growing in a by-place farre out of
the way, and from whence a man cannot heare a cock crow out of any town, maketh more ſhrill
pipes and louder trumpes than any other. The Brambles beare certaine berries like the Mul-
berries, euen as doth ſweet Brier of another kind, which they call Cynosbatos or the Eglantine,
carieth the reſemblance of a Roſe. A third ſort there is of brambles, which the Greeks cal Idea,
F of the mountaine Ida. This is the Raſpis: ſmaller it is and more ſlender than the reſt, with leſſe
pricks vpon it, and nothing ſo ſharpe and hooked. The floure of this Raſpis beeing tempered
with hony, is good to be laied to bleared and bloud-ſhotten eies; as alſo to the wild-fire, or diſ-
eaſe called Saint Anthonies fire. Being taken inwardly, and namely drunk with water, it is very
comfor-

comfortable to a weake ſtomacke. The Elder beareth certain blacke and ſmall berries, full of a G
groſſe and viſcous humor, vſed eſpecially to die the haire of the head black. If they be boiled
in water they are good and wholſome to be eaten as other pot-herbs.

Chap. XXXVIII.

¶ *Of the iuice or humor in trees. The nature of their wood and timber. The time and manner of felling and cutting downe trees.*

TRees haue a certaine moiſture in their barkes, which we muſt vnderſtand to be their very
bloud, yet is it not the ſame nor alike in all: for that of the Fig trees is as white as milke,
and as good as rendles to giue the forme to cheeſe. Cherry trees yeeld a glutinous and H
clammy humor, but Elmes a thin liquor in manner of ſpittle. In Apple trees the ſame is fattie
and viſcous; in Vines and Pyrries wateriſh. And generally, thoſe trees continue and liue long-
geſt, that haue ſuch a glewy moiſture in them. In ſumme, there are to be conſidered in the ſub-
ſtance and body of trees, like as of all other liuing creatures, their skin, their bloud, fleſh, ſinues,
veins, bones, and marrow. For in lieu of their hide is the barke. And I aſſure you, a ſtrange and
maruellous thing it is to be obſerued here in the Mulberry, that when Phyſitians ſeek to draw
the foreſaid liquour out of it, at ſeuen or eight a clocke in a morning, if they ſcarifie or lightly
cut the barke with a ſtone, it iſſueth forth, and they haue their deſire: but if they cruſh or cut it
deeper in, they meet with no more moiſture than if it were ſtark dry. In moſt trees next to the
skin lieth the fat: this is nought elſe but that white ſap which of the colour is called in Latin
Alburnum. As it is ſoft in ſubſtance, ſo is it the worſt part of the wood; and euen in the ſtrong I
oke, as hard as otherwiſe it is, ye ſhal haue it ſoon to putrifie and rot, yea and quickly be worm-
eaten. And therefore if a man would haue ſound and good timber, this white muſt be alwaies
cut away in the ſquaring. After it followeth the fleſh of the tree; and ſo the bone, which is the
very heart and beſt of the wood.

All trees whereof the wood is ouer dry, beare fruit but each other yeare, or at leaſtwiſe more
in one yere than another, as namely the Oliue tree: a thing obſerued more in them than in thoſe
that haue a pulpous and fleſhie ſubſtance, as the Cherry tree. Neither are all trees indifferent-
ly furniſhed with ſtore of the ſaid fat or fleſh, no more than the moſt fierce and furious beaſts.
As for the Box, Cornel, and Oliue trees, they haue neither the one nor the other, ne yet any ma-
row at all, and but very little bloud. Semblably, the Servis tree hath no heart, the Alder no car- K
noſitie, (and yet both of them are ſtored wel enough with marow, which is their pith) no more
than canes or reeds for the moſt part. In the fleſhy ſubſtance or wood of ſome trees there are to
be found graine and veine both. And eaſie it is to diſtinguiſh the one from the other: for com-
monly the veins be larger and whiter; contrariwiſe the grain, which the Latines cal Pulpa, run-
neth ſtreit and direct in length, and is to be found ordinarily in trees that wil eaſily cleaue. And
hereupon it commeth, that if a man lay his eare cloſe to one end of a beame or piece of timber,
he ſhall heare the knocke or pricke that is made but with a pen-knife at the other end, be the
piece neuer ſo long, by reaſon that the ſound goeth along the ſtreit grain of the wood. By this
meanes alſo a man ſhall find when the timber doth twine, and whether it run not euen, but be in-
terrupted with knots in the way. L

Some trees there be that haue certain hard bunches bearing out and ſwelling like to kernels
in the fleſh of a Swines necke: and theſe knobs or callofities haue not in them long grain and
broad veine, as is aboue ſaid, but only a brawny fleſh (as it were) rolled round together: And to
ſay a truth, when ſuch knurres and callofities as theſe be, are found either in Citron or Maple
trees, men make great account of them, and ſet no ſmall ſtore by that wood. All other ſorts of
Tables, when the trees are clouen or ſawne into plankes, are brought into a round compaſſe
with the grain: for otherwiſe, if it were ſlit ouerthwart to make them round againſt the grain,
it would ſoon breake out. As touching the Beech, the graine of it runneth croſſe two contrary
wayes like combe teeth; but in old time the veſſels made of that wood were highly eſteemed.
As for example, *Manius Curius* hauing ſubdued his enemies, proteſted, and bound it with an M
oath, That of all the booty and pillage taken from them, hee had not reſerued any thing for
himſelfe, but onely a cruet or little Ewer of Beech wood, wherein he might ſacrifice vnto the
gods.

There

A There is no wood but floteth aloft the water, and waueth in length: like as that part which
is next to the root is far more weighty, ſetleth faſter downe and ſinketh. Some wood hath no
veins at all, but conſiſteth only of a meere grain, ſtreight and ſmall in maner of threds, & ſuch
commonly is eaſie to be cloven. There is again wood that hath no ſuch direct graine, and that
will ſooner breake out than cleaue; and of this nature is the Oliue and Vine-wood. Contrari-
wiſe, the whole body and wooddy ſubſtance of the Figge tree is nothing but fleſh. The Maſt-
holme, Cornel, Oke, Tretrifolie, Mulberry, Ebeny, and Lotus, which haue no pith and marrow
within, as is beforeſaid, are all heart. All wood for the moſt part turneth to a blackiſh colour.
The Cornel tree is of a deep yellow, wherof are made the faire Bore-ſpeare ſtaues, which ſhine
again, and be ſtudded (as it were) with knots, and chamfered betweene both for decencie and
B handſomneſſe. The Cedar, Larch, and Iuniper wood is red.

Chap. XXXIX.

¶ *Of the Larch tree, the Firre, and the Sapine: the manner of cutting or falling ſuch like trees.*

THere is a female Larch tree which the Greeks call Ægis: the wood whereof is of a plea-
ſant colour, like to hony. Painters haue found by experience, that it is excellent good for
their tables, both for that it is ſo euen and ſmooth, not apt beſides to chink and cleaue: as
alſo becauſe it will endure and laſt for euer. And that part they chuſe which is the very heart
C of it, and next the pith, which in the Fir tree the Greekes call Leuſon. In like ſort the heart of
the Cedar is hardeſt which lieth next to the pith or marrow aboue named (much after the ma-
ner of bones in the bodies of liuing creatures) when the muddy carnoſitie is ſcraped off and ta-
ken away. The inward part alſo of the Elder by report is wondrous hard & tough, and they that
make thereof ſtaues for Bore-ſpeares prefer it before any wood whatſoeuer. For it ſtandeth on-
ly vpon skin and bone, that is to ſay, of the rind and heart.

Theophraſtus writeth this of the Cornell tree.

As touching the falling and cutting downe of trees, to ſerue either in temples or for other
vſes, round and entire as they grow, without any ſquaring; as alſo for to barke them, the onely
time and ſeaſon is, when the ſap runs, and that they begin to bud forth: otherwiſe you ſhal ne-
uer be able to get off their bark: for bark them not, they wil rot and become worm-eaten vnder
D the ſaid barke, and the timber withall wax duskiſh and blacke. As for the other timber that is
ſquared with the axe, and by that means rid from the barke, it would be fallen or cut downe be-
tween mid-winter and the time that the wind Favonius bloweth: or, if we be forced to vſe the
timber before, and to preuent that time, trees may be fallen at the ſetting of the ſtar Arcturus,
or of the Harp-ſtar before it. Finally, the vtmoſt and laſt time thereof is at the ſummer Sunne-
ſted. But foraſmuch as moſt men be ignorant of theſe ſeaſons, and know not when theſe ſtarres
aboue named do either riſe or fall, I will hereafter ſhew the reaſon both of the one and other in
place conuenient. For this preſent, as touching the time of felling trees, the common ſort make
no more ſcruple, but thinke it ſufficient to obſerue, that no trees which are to be hewne ſquare
for carpenters work be caſt down and laid along before they haue borne their fruit. As for the
E hard and ſauage Oke, if it be felled in the ſpring it will be ſubiect to the Worme: but cut it
down in mid-winter, it will neither warp, ne yet cleaue and chink: being otherwiſe ſubiect vnto
both, namely, as well to caſt and twine, as to rift and gape: a thing incident to the Cork wood,
be it cut down in as good a ſeaſon as is poſſible. Moreouer, it paſſeth to ſee how much the age
of the Moon auaileth in this caſe: for it is commonly thought that timber would not be fallen
but in the wain, and namely in the laſt quarter, from the 20 day of the Moon, till the thirtieth.
And this is generally receiued among all good workmen, That the beſt time to cut downe any
timber, is in the coniunction of the Moon with the Sun, euen in the very day of the change, be-
fore ſhe ſheweth new. Certes *Tiberius Cæſar* the Emperor gaue order to fel the Larch trees that
came out of Rhætia, to repaire and re-edifie the bridge that ſerued to repreſent the ſhew of a
F nauall battell vpon the water (which fortuned to be conſumed with fire) iuſt at the change of
the Moon. Some ſay, that we muſt preciſely obſerue the point of the conjunction, and that the
Moon withall be vnder the earth, when ſuch trees ſhould be felled: which cannot be but in the
night. But if it fall out beſides, that this conjunction or change of the Moone, and the laſt day
of the Winter Sun-ſtead meet together at one inſtant; the timber then cut downe will laſt a

world

world of yeares. Next vnto it is that timber which is fallen in the daies and signes aboue re- G
hearsed. Others affirme moreouer, that the rising of the Dog-star would be considered and chosen for this purpose: for at such a time was that timber feilled which serued for the stately hall or pallace of *Augustus*. Moreouer, for to haue good and profitable timber, the trees would be cut down that are of a middle age, for neither yong poles nor old runts are fit for durable building. Furthermore, there be that hold opinion, that for to haue the better timber, the trees should haue a kerfe to the very heart and pith round about, and so let it stand an end still, that all the humor by that means might run out, before they be ouerthrowne and laid along. And verily a wonderfull and miraculous thing is reported in old time, during the first Punicke war against the Carthaginians, namely, that all the ships of that fleet which was conducted by Generall *Duellius* the high Admiral, were shot into the sea and vnder saile, within sixty daies after H
the timber whereof they were built was cut downe in the wood. And *L. Piso* hath left in writing, That against king *Hiero* there were 220 ships made & furnished in 45 daies after the timber grew. Also in the second Punick war, the Armado which *Scipio* imploied, was set aflote and bare saile forty daies after the fall of the timber. See how forcible and effectuall in all things is the season and opportunitie of time duly taken, especially when need driueth to make speed and hasten apace.

Cato the chiefe and only man of all others for experience and knowledge in euery thing in his treatise of all kind of timber to be imploied in building, giues these rules following. Make thy pressing plank especially of the black * Sapine or Horn-beam tree. *Item*, When soeuer thou meaneſt to storke vp either Elme, Pine, Walnut tree, or any other what soeuer for timber, see I
thou dig it out of the ground, in the wane of the Moon, and that in the afternoon, and take heed in any wise that the wind be not South. *Item*, The right season to fell a tree for timber, is when the fruit is ful ripe. *Item*, Beware in any case, that thou neither draw forth of the ground, nor yet square a tree when the dew falleth. And a little after: Beware thou meddle not with timber trees but either at the change or full of the Moon. And in no hand, neither stork it vp then, nor hew it hard to the ground. But within foure daies after the full Moone, plucke vp trees hardly, for that is the best time. *Item*, Be well aduised, that thou neither fell, square, nor touch with the ax, any timber that is black, vnlesse it be dry. And meddle not with it, if either it be frozen or full of dew. *Tiberius* the Emperor aboue named obserued likewise the change of the Moon, for cutting the haire both of head and beard. And yet *M. Varro* gaue a rule, That to preuent bald- K
nesse and the shedding of haire, the Barber should be sent for alwaies after the full Moon.

* Sapine or Carpine.

But to come again vnto our timber trees: The Larch and Fir both (but the Fir especially) if they be cut down, bleed a long time after, and yeeld abundance of moisture. Indeed, these twain of all others be the tallest, and grow most streight and vpright. For Mast-poles and crosse saile-yards in ships, the Fir or Deale is commended and preferred before all other; for the smoothnes and lightnesse withall. The Larch, the Fir, and the Pine haue this propertie common to them all, To shew the graine of their wood running either parted in foure, forked in twaine, or single one by one. For fine carpentry and Ioiners seeling within house, the heart of the tree would be clouen or rent. The quarter timber, or that which runneth with foure grains, is simply the best, and more pleasant to be wrought than the rest. They that be skilfull woodmen, and haue expe- L
rience in timber, wil soon find at the first sight the goodnes of the wood by the very bark. That part of the Fir tree which groweth next to the earth is without knots, euen and plain: the same is laid to soke and season in the water, and afterwards the barke is taken off, and so it commeth to be called Sapinus. The vpper part is knotty, and harder than the nether, and the Latins name it Fusterna. In sum, what tree soeuer it be, that side which regardeth the North is more strong and hard than the other. And generally, the wood of those trees that grow in moist and shadie places is worse: contrariwise, that which commeth from ground exposed to the Sun-shine is more fast and massie, and withall endureth a long time. And herupon it is, that at Rome the Fir trees that come from the nether sea side out of Tuscane, be in better request than those from Venice side, vpon the coast of the vpper sea. M

Moreouer, there is great ods between Firre trees, in regard of diuers Countries and Nations where they grow. The best are those of the Alps and the Apennine hills. Likewise in France there are excellent good Firs vpon the mountains Iura and Vogesus: as also in Corsica, Bithinia, Pontus, and Macedonia. A worse kind of them grow in Arcadia and about the mountaines neere

A neare Ænea. The worst be those of Pernassus, & Eubœa: for in those parts they be ful of boughs and grow twined, besides, they soone doe putrifie and rot.

As for Cedars, the best simply be those that grow in Candy, Affricke, and Syria. This vertue hath the oile of Cedar, That if any wood or timber be thoroughly anointed therewith, it is subiect neither to worme nor moth, ne yet to rottennesse.

The Iuniper hath the same propertie that the Cedar. They proue in Spaine to be exceeding big and huge, the Berries also greatest of all others. And where soeuer it grows, the heart thereof is more sound than the Cedar.

A generall fault and imperfection there is common to all wood, When the graine, and the knots run into round balls; and such they call in Latin Spiræ. Also in some kind of timber, like
B as in marble also there be found certaine knurs like kernils, as hard they be as naile heads, and they plague sawes, where soeuer they light vpon them. Otherwhiles they fall out to be in trees, by some accidental occasion, as namely, when a stone is got into the wood, and enclosed within it: or, in case the bough of some other tree be incorporat or vnited to the foresaid wood. There stood a long time a wild Oliue in the market place of Megara, vpon which the hardie and valiant warriors of that citie vsed to hang and fasten their armor, after some worthy exploit performed: which in tract and continuance of time were ouergrown with the bark of the said tree, and quite hid. Now was this a fatal tree vnto the same city and the inhabitants thereof, who by way of Oracle were forewarned of their wofull destiny and vtter ruin, which was to happen. When that a tree should be with yong, and deliuered of harneis: which Oracle was fulfilled when this
C tree was cut downe, for within the wombe thereof were found the mourrions, jambriers, of grieues, of braue men in times past. To conclude, it is said, That such stones so found in trees be singular good for a woman with child, to carie about her, that she may goe her full time.

Chap. XL.

¶ Of diuers sorts of timber. Of certaine trees of extraordinarie bignesse. What trees they be that neuer be worme-eaten, nor decay and fall. What wood doth endure and continue alwaies good.

D THe greatest tree that to this day had euer been knowne or seene at Rome, was that, which being brought with other timber for the rebuilding of the foresaid bridge called Naumachiaria, *Tiberius Cæsar* commanded to be landed and laid abroad in view for a singular and miraculous monument to all posteritie: and it remained entire and whole, vntill the time that *Nero* the Emperour built his stately Amphitheatre. This peece of timber was of a Larch tree: it contained in length 120 foot, and caried in thickenesse euery way two foot, from one end to the other. Whereby a man may guesse and judge the incredible height of the whole tree beſides, to the very top. Such another tree there was to be seen in our daies, which *M. Agrippa* left for the like singularity and wonder of men, in those stately porches and cloisters that hee made in *Mars* field: and it continued still after the building of the muster place and treasurers hall named Diribitorium. Shorter it was than the former by 20 foot, and caried a foot and half
E in thickenesse. As for the Fir tree, which serued for a mast in that huge ship, which by the commandement and direction of *C. Caligula* the Emperour transported and brought out of Ægypt, that Obelisk which was erected and set vp in the Vatican hil, within the cirque there, together with the foure entire stones which bare vp the said Obelisk as supporters; it was seen of a wonderfull and inestimable height aboue all others: and certaine it is, that there was neuer knowne to flote vpon the sea a more wonderful ship than it was. She receiued 120000 Modij of Lentils for the very ballaist; she tooke vp in length the greater part of the left side of Hostia harbour, for the very ballaist; she tooke vp in length the greater part of the left side of Hostia harbour; for *Claudius* the Emperor caused it there to be sunk, together with three mighty great piles or dams founded vpon it, and mounted to the height of towers, for which purpose there was brought a huge quantity of earth or sand from Puteoli. The maine bodie of this mast contai-
F ned in compasse 4 fadom full. And a common by-word it is, currant in euery mans mouth, that Fir mast for that purpose, are vsually sold for eight hundred Sesterces apeece, and more monie: whereas for the most part planks which are set together and serue in stead of boats, ordinarily cost but forty. Howbeit, the kings of Egypt and Syria, for default and want of Fir (haue vsed by report) in stead thereof Cedar wood about their shipping. And verily, the voice goes of an exceeding

ceeding big one which grew in Cyprus, and was cut downe for a maſt to ſerue that mighty gal- G
leace of king *Demetrius*, that had eleuen bankes of oares to a ſide; a hundred and thirtie foot it was high, and three fatham thicke. And no maruell, ſince that the pyrats and rouers, who haunt the coaſts of Germanie, make their punts or troughs of one entire peece of wood and no more, wrought hollow in manner of a boat, and ſome one of them will hold thirtie men.

To proceed now vnto the ſundry natures of wood. The moſt maſſie and faſt wood, and therfore the weighteſt of all other, by iudgment of men, is that of the Ebene and the Boxe: both ſmall trees by nature. Neither of them twaine ſwims aboue the water, no more will the Corke wood, if it be barked, nor the Larch. Of all the reſt, the ſaddeſt wood is that of Lotus, I meane that which at Rome is ſo called. Next to it, is the heart of Oke, namely, when it is rid of the white ſappie wood: the heart (I ſay) which comes neare to a black color: and yet the Cytiſus or H
Tetrifolie is blacker, and ſeemeth moſt to reſemble the Ebene. Howbeit, you ſhall haue ſome who affirme that the Terebinths of Syria be blacker than it. There was one *Thericles* a famous Turner, who was wont to make drinking cups, mazers, and bowles of the Terebinth; which is a ſufficient proofe, that the wood is fine and hard. This wood alone of all others, loueth to be oiled, and ſurely the better it is for the oile. But a maruellous prety deuice there is to ſet a paſſing faire blacke color, and a ſhining gloſſe vpon it; with Walnuts and wild Peares, namely, boiling theſe together, and making thereof a mixture and compoſition to giue the ſaid tincture. All theſe trees abouenamed haue a fad and faſt wood. Next to them in that reſpect is the Cornell tree: and yet I cannot properly range it in the order of timber trees, ſo ſmall and ſlender it is. Neither is the wood there of in manner good for nought elſe but for ſpokes in cartwheeles, alſo to make wedges to cleaue wood, and tough pins, that wil hold as faſt well neer as yron ſpikes. In I
like ſort, the Maſt-holm, the Oliue both wild and tame, the Cheſtnut tree, the Hornbeam tree, and the Poplar, be of an hard ſubſtance, and meet for this purpoſe: The wood hereof hath a curled graine like the Maple, and ſurely would be as good timber as any, but for often lopping the boughs, which gueldeth and diminiſheth the ſtrength. Moreouer, many of them there bee, and the Oke eſpecially, ſo hard, that vnleſſe they be ſoked firſt in water, it is impoſſible to bore a hole into them with an augoer, or to plucke forth a nail if it be once ſet faſt, water them as much as you will. Contrariwiſe, the Cedar will not hold a naile. The wood of the Linden tree ſeemes of all other to bee moſt ſoft, and hoteſt withal: for proofe whereof, this reaſon men doe alleadge, becauſe it ſooneſt turnes and dulles the axe edge. Of a hote nature alſo are the Mulberrie tree, the Lawrell, and the Yvie, and in one word, all thoſe that ſerue to ſtrike fire with. This experi- K
ment was firſt found out by ſpies, that goe between camp and camp, by ſheepheards alſo in the field: for hauing not flint euermore readie at hand to ſmite and kindle fire withall, they make ſhift for to rub and grate one wood againſt another, and by this attrition there fly out ſparkles, which lighting vpon ſome tinder, made either of drie rotten touchwood, or of bunts and withered leaues, very quickly catch fire, and burne not out. And for this intent, there is nothing better than to ſtrike the Yviewood, with the Bay. In this caſe alſo the wilde Vine (I mean not Labruſca) is much commended: and it climbeth and runneth vpon trees in manner of Yuie.

The trees that grow in waterie grounds be coldeſt of all others: but ſuch be tougheſt and therefore beſt to make bucklers & targuets, the wood whereof, if it be cut, comes quickly toge- L
ther, and cloſes vp the gaſh againe, and in that regard, much adoe there is to pierce it thorough with any weapon whatſoeuer. And of this ſort are Fig trees, Willowes, Lindens, Birch, Elder, Aſh, and Poplar. Of all theſe, the Fig tree and the Willow be lighteſt, and therefore fitteſt for that purpoſe. Theſe trees laſt rehearſed, be good for caskets and foſſers: wicker baskets alſo and prettie paniers, which be made of winding twigs. Their wood beſides is faire & white, ſtreight alſo and eaſie to be grauen. The plane wood is ſoft and gentle, but moiſt withall; and ſo is the Alder. Elme likewiſe, Aſh, Mulberry, and Cherry-tree wood, is pliable, but drier and more ponderous. The Elme, of all kinds of wood, will keep ſtreight and ſtiffe beſt, and not warp at all: & becauſe it twines and caſts not, it is paſſing good for hinges and hooks, for ſawne bords for ledges in dores and gates, ſo as this regard be had of exchange, that the vpper end of the bord that grew toward the head of the tree, be fitted to the nether hinge or hooke of the dore; and con- M
trariwiſe the butt end, ſerue the higher. The Date tree and the Corke, haue a ſoft and tender wood. The Apple tree, Peare tree, and Maple, haue as fad and maſſie; but brittle it is, like as all wood that goeth with a croſſe and friſled grain. And look what tree ſoeuer is naturally hard and

A and tough, the wild and the male of the ſame kind, haue their wood more churliſh than otherwiſe it is in the reſt. Semblably, thoſe that beare no fruit, are of a faſter and firmer wood than the fruitful: vnleſſe it be that that the males be bearers and the female barren, of which ſort are the Cypreſſe and Cornell trees. The wood of Cypreſſe, Cedar, Ebene, Lotus, Box, Yew, Iuniper, and the Oliue both ſauage and gentle, is neuer worme-eaten, ne yet rotteth for age. As for all other trees, long it is before theſe decay, to wit, the Larch, the Oke, the Corke tree, Cheſtnut and Walnut tree. The Cedar, Cypreſſe, and Oliue wood, neuer doth chinke or cleaue of it ſelf, vnleſſe it be by ſome accident.

It is commonly thought, that the Box, the Ebene, the Cypreſſe, and the Cedar wood, is euerlaſting and will neuer be done. An euident proofe thereof as touching all theſe ſorts of timber, by the iudgment and choiſe of ſo many men, was to be ſeene in that famous temple of *Diana* in
B Epheſus: for al Aſia ſet to their helping hand and contributed toward that work, which in foure hundred yeres and not before, they brought to an end & finiſhed. The beames, rafters, and ſpars that went to the making of the rouſe, were by the generall voice of the whole world, of Cedar timber. As touching the ſtatue or image it ſelfe of the goddeſſe *Diana*, it is not certainly known of what wood it was: all writers, ſaue only *Mutianus*, report that it was of Ebene. As for him, a man who had been thrice Conſull of Rome, and one of the laſt who vpon their owne ſight of the ſaid thing, wrate therof, auoucheth that it was made of Vine wood; and that, howſoeuer the temple was ruined and rebuilt againe no leſſe than ſeuen times, yet the foreſaid image was neuer altered nor changed. Who ſaith moreouer, that *Canetias* choſe that wood for the beſt (for ſo he named the workman that cut and carued it.) And I much maruel therat, conſidering that
C by his ſaying this image was of greater antiquity than that of lady *Minerua*, much more than of prince *Bacchus*. He addes moreouer and ſaith, that this ſtatue was embaulmed within, by reaſon of the precious oile of Spiknard, which was diſtilled into it at many holes: by means of which medicinable liquor, the wood was nouriſhed, and the joints held cloſe and faſt-together: where, at I cannot cliuſe but maruell again very much, that conſidering the ſtatue was ſo ſmall, it ſhould haue any peece or joint at all. Now as touching the leaues of the dores belonging to this temple, they were by his report, of Cypreſſe wood: and continued ſtill freſh and new to the eye, notwithſtanding it is foure hundred yeares well neare ſince they were made. Where, by the way this is to be noted, that theſe dores ſtood foure yeres glewed in the claue. And verily, this wood
D was choſen for that purpoſe, becauſe among other properties, the Cypreſſe alone hath the gift, to looke alwaies ſhining and poliſhed, and neuer loſeth the gloſſe and beauty. And for to proue this, we need not to goe farre: Looke but vpon the emage of * *Vejouis*, in the Capitol, made of * Or, *Iupiter.*
Cypreſſe wood, doth it not endure ſtill faire and trim? and yet was it dedicated and conſecrated in that temple, in the yeare after the foundation of Rome, 551.

A famous and memorable temple there is of *Apollo* at Vtica, where the beames and maine peeces of timber, made of Numidian Cedars, remaine as whole and entire as at the firſt day when they were ſet vp, which was when the citie was firſt founded: by which computation, they haue continued alreadie 1188 yeares. Moreouer, it is ſaid, that at Saguntum a citie of Spaine, there is a temple of *Diana* ſtill ſtanding, a little beneath the citie: and yet as king *Borchus* mine Author ſaith, 200 yeares before the ruine and deſtruction of Troy, the ſame men that brought
E the image of the ſaid *Diana* from the Iſland Zacynthus, founded the temple aboueſaid. For the antiquity and religion whereof, *Annibal* made ſome conſcience to demoliſh it, and would not once touch it: and therein are to be ſeen at this day the beames and rafters of Iuniper, ſound and good. But aboue all other memorable is the temple of the ſaid goddeſſe *Diana* in Aulis, which was built many hundred yeres before the Trojane war; but what kind of timber was employed about the Carpentrie thereof, is not well knowne. Howbeit, this we may boldly reſolue vpon, that the more odoriferous any wood is, the more durable alſo it is and euerlaſting.

Next to theſe trees aboue rehearſed, the wood of the Mulberrie tree is moſt commended: which in tract of time as it growes to be old, waxes alſo blacke. Moreouer, ſome kinds of wood
F as they be more laſting than other, ſo they continue better being emploied in one kind of work, than they do in another. The Elme timber will well abide the aire and the wind. The wild Oke Robur loueth to ſtand within the ground, and the common Oke is good in the water: let it bee vſed aboue ground to take the aire and the weather, it will caſt, warpe, and cleaue too bad. The Larch wood agreeth paſſing wel with water works, and ſo doth the black Alder. As for the Oke

Robur,

Robur, it will corrupt and rot in the sea. The Beech will doe well in water, and the Walnut tree likewise: but to stand within the earth, they are principall good, and haue no fellow. And for the Iuniper, it will hold the owne, being laid vnder ground, but for building aboue in the open aire, it is excellent good. The Beech and the Cerus wood rot quickly. The smal Oke called Esculus canot abide the water. The Cherrie tree wood is firme and fast: the Elme and the Ash are tough; howbeit, they will soone settle downward and sag, being charged with any weight, but bend they will before they break: and in case before they were fallen, they stood a while in the wood, after they had a kerfe round about, for their superfluous moisture to run out vntill they were well dried, they would be the better and sure in building. It is commonly said, that the Larch wood if it be put into ships at sea, is subject to wormes: like as al other kinds of wood, vnlesse it be the wild and tame Oliue. For to conclude, some timber is more readie to corrupt and be marred in the sea, and others againe vpon the land.

Chap. XLI.

¶ *Of wormes that breed in wood.*

OF vermine that eat into wood, there be 4 kinds. The first are called in Latine Teredines; a very great head they haue for the proportion of the body, and with their teeth they gnaw. These are found only in ships at sea, and indeed properly none other be Teredines. A second sort there be, and those are land wormes or mothes, named Tineæ. But a third kind resembling gnats, the Greeks tearme by the name of Thripes. In the fourth place bee the little wormes; whereof some are bred of the putrified humor and corruption in the very timber: like as others againe engender in trees, of a worme called Cerastes: for hauing gnawne and eaten so much, that he hath roume enough to turne him about within the hole which he first made, hee engendreth this other worm. Now, some wood there is so bitter, that none of these wermin will breed in it, as the Cypresse: others likewise so hard, that they cannot eat into it, as the Box. It is a generall opinion, that if the Firre be barked about the budding times, at such an age of the Moon as hath been before said, it will neuer putrifie in the water. Reported it is by those that accompanied *Alexander* the great in his voiage into the East, that in the Isle Tylos lying within the red sea, there be certain trees that serue for timber to build ships, the which were known to continue two hundred yeares: and being drowned in the sea, were found with the wood nothing at all perished. They affirmed moreouer, that in the same Island there grew little plants or shrubs, no thicker than would wel serue for walking staues to cary in a mans hand, the wood whereof was massie and ponderous, striped also and spotted in manner of a Tygres skin; but so brittle withall, that if it chanced to fall vpon a thing harder than it selfe, it would breake into sitters like glasse.

Chap. XLII.

¶ *Of timber good for Architecture and Carpentrie: what wood will serue for this or that worke: and which is the strongest and surest timber for roufes of building.*

WEe haue here in Italie, wood and timber that will cleaue of it selfe. For which cause our Maister Carpenters giue order to besmeare them with beasts dung, and so to lie a drying, that the wind and piercing aire should not hurt them. The joists and plankes made of Firre and Larch, are very strong, to beare a great weight, although they bee laid in length ouerthwart. Contrariwise, the Rafters made of the wild Oke Robur, and Oliue wood, will bend, & yeeld vnder their load: whereas the other named before, do resist mainly & withstand, neither will they easily break, vnlesse they haue much wrong: nay sooner do they rot, than faile otherwise in strength. The Date-tree wood also is * tough and strong, for it yeeldeth not, but curbeth the contrarie way. The Poplar setteth and bendeth downeward: whereas the Date-tree contrariwise rises vpward archwise. The Pine and the Cypres are not subject either to rottennesse or worme-eating. The Walnut tree wood soone bendeth, and is saddle-backt as it lieth, (for thereof also they often vse to make beames and rafters) but before that it breaketh, it will giue warning by a cracke, which saued many a mans life in the Island Antandros, at what time

* *Valide, Theophrast.*

A time as being within the common baines, they were skared with the crack that the floore gaue, and ran forth speedily before all fell. Pines, Pitch trees, and Allar, are very good for to make pumps and conduit pipes to conuey water: and for this purpose their wood is boared hollow: lying buried vnder the ground, they will continue many a yeare found and good: let them bee vncouered without any mould and lie aboue ground, they will quickly decay. But if water also stand aboue the wood, a wonder it is to see how they will harden therewith and endure. Firre or Deale wood, is of all other surest and strongest for roufes aboue head: the same also is passing good for dore leaues, for bolts and barres: also in all seelings and wainscot or whatsoeuer it bee, whether Greekish, Campaine, or Sicilian, it is best, and maketh very faire worke. A man shall see the fine shauings thereof run alwaies round and winding, like the tendrills of a vine, as the B Ioyner runneth ouer the paines and quarters with his planer. Moreouer, the timber of it is commendable for coaches and chariots: and there is not a wood that makes a better and stronger joynt with glew, than it doth: insomuch, as the sound plank will sooner cleaue in any other place, than in the joynt where it was glewed.

Chap. XLIII.

¶ *Of glewing timber: of rent, clouen, and sawen painell.*

GReat cunning there is in making strong glew, and in the feat of joyning with it, as well in regard of seelings and wainscot made of thin bourd and painell, as of marquetry & other C inlaid workes: and for this purpose, Ioyners doe chuse the mistresse threadie grain that is most streight, which some call the Fertill veine, because ordinarily it breedeth others, and yee shall see it branching and curled, as if it shed teares and those trickling down. In euery kind of wood what soeuer, the crisped graine will not take glew and beare a joynt. Some wood it is impossible to glew and joyne, with peeces of their owne kind, much lesse of other wood; as the hard Oke Robur. And lightly ye shall not haue peeces of a diuers nature, knit and vnite well in a joint, no more than if a man should go about to glew & join stone & wood together. The Seruise tree wood canot in any wise sort in a joynt with the Corneil wood; no more can the Hornbeame and the Box: after them, the Tillet or Linden wood may hardly away with his societie. To speak generally, what soeuer wood is gentle and apt to bend, (such as we cal pliant) the same D is good and easy to be wrought to any work that a man would haue: to which, you may put the Myrtle and wild Fig-tree. Durable and handsome withall, either to be cut, squared, clouen or sawen, are all those kinds of wood which be by nature moist. As for drie peeces of timber, they giue not way so fast to the saw, as greene: and yet you must except the Oke and the Box wood, which although they be greene, do stiffely withstand the saw-gate, choking and filling vp their teeth euen; by which meanes the slit is hindred, and the worke goeth not forward: which is the cause also that the sawyers draw vp & let downe the saw twice, before the teeth send from them any dust into the pit. As for the Ash, it is most easie to be wrought, put it to what vse you will, and makes the fairest worke: and namely for horsemens staues, better it is than Hazell, lighter than the Corneil, and more gentle and pliable than the Seruise wood. The French white Ash, it will bend well for cart-thills and fellies. The Elme would be very like vine-wood, but that it is more ponderous and heauie. The Beech is easie to be wrought into any form, brittle though it be and tender: yet thereof are made fine trenchers, thin shindles, and such like, as will wind and bend euery way: and therfore it is the only wood commendable for to make prettie caskets, paniers, and boxes. The mast-Holme also may be cut into fine thin foile or leaues like plates, and those also are of a daintie and pleasant colour: but singular good is the wood thereof for such things as fret and weare with rubbing, and namely, the axle trees in wheeles: and as the Holme is fit for this purpose in regard of the hard wood; so the Ash likwise, because it is so lyth & pliable: in which two respects, the Elm is chosen before them both. Moreouer, the wood of these trees before-named, are notable to make many prettie tooles that serue artizans in their daily worke: and therefore it is commonly said, That the wood of the wild Oliue, Boxe, mast-Holm, Elme, and Ash, are excellent good for awgre-handles and wimble stockes. Of the same also are made mallets, but beetle heads of the bigger sort, of the Pine and Holme. A great reason why these kinds of wood are the more tough and harder, is when the trees haue their right season, and be cut down in their best time, rather than too soon and before they be come to maturity.

Thus it hath beene knowne that doore-hinges and hookes made of Oliue wood (which otherwise is most hard) if they haue rested any long time, and not beene worne by shutting, and opening too and fro, haue put forth fresh buds, as if they had growne still in the plant. As for the dore-barres and bolts, *Cato* would haue them made of Holly, Bay-tree, and Elme. The handles and helues of rusticall tooles, mattocke steeles, and spade trees, *Hyginus* willeth they should bee either of Hornebeame, Holme, or Cerrus. For fine painell in fret-worke, for seeling also and ouerlaying other wood, these are the chiefe, the Citron, Terebinth, Maple of all sorts, Box, Date tree, Huluer, Holme, Elder root, and the Poplar. The Alder tree likewise (as hath beene said) affordeth certain swelling bunches & hard knots, which may be cut and clouen into most daintie flakes and precious leaues, as faire and pleasant to the eie for their damask branch, as either Citron or Maple: setting which three aside, there be no knurs and nodosities in any tree worth ought and of account.

Moreouer, yee shall haue trees ordinarily in the mids toward the heart, carie a more crisped and curled wood; and the neerer it is to the but or root end, the finer is the graine, more branching also, and the streaks winding in and out. Loe, from whence first came the superfluous expence to couer and seele one wood with another! See how those trees which for their very wood were of no price, are become more costly and dearer, when they serue as a barke to clad others! that one tree forsooth by this means, should be so sold many & sundry times at a feueral price. Thus haue been deuised (I would not els) thin leaues of wood, like gold or siluer-foile. And yet that is not all: for there is come vp of late a deuise, to paint and die in sundrie colors the hornes of beasts, to cut and saw their teeth into thin plates: and wheras at first there was fret-works only inlaid and set out with Ivorie here and there, soone after it came to passe, that the wood was couered all ouer therewith. Neither hath the ryot and wastfull prodigality of the world staied there, but proceeded farther, euen to search into the deepe sea for that, which might serue in stead of wood and timber. Thus the tortoise shel hath been cut into flakes and leaues, for want forsooth of wood vpon drie land. And now of late daies, certaine monstrous spirits, during the Empire of *Nero*, haue found out a deuise to disfigure the Tortoise shel also with paintings, that it might be sold the dearer when it looke like wood. Thus means are wrought, that the price of beds should be raised and set vp by this meanes: thus they would haue the Terebinth wood to bee excessiue deare and aboue the worth: thus must the Citron wood be enhaunsed to an higher rate: and thus the Maple is counterfeited, Tortoise shells are foisted in the place and bought for it. To conclude, of late daies the curiositie of men was such, that they could not content themselues with rich and costly wood; and now for to beautify and set out ther wood, Tortoise shels must needs be bought, there is no remedie.

Chap. XLIIII.

¶ The age of trees: what kind of trees they be that are of least continuance. Semblably, of Misselto, and the Priests called Druidæ.

If a man would consider the hidden corners of the world, and the inaccessable desarts that be in it, he might by infallible arguments conclude and resolue, that there be some trees that haue continued time out of mind, and liued infinitly. But to speak of their age only that are known (euen by the testimonie of ancient records, and those faithfully deliuered vnto vs) there are to be seen standing or growing at this day, about Linternum (a towne in Campaine) certain Oliue trees, that *Scipio Africanus* (the first of that name) planted long since with his owne hand. In the same place also there is a Myrtle tree, of a rare and admirable greatnesse; and vnder it, a caue or hole in the ground, wherein (by report) there lyeth a dragon that keepes the ghost and soule of the said *Scipio*. And at Rome, in the court-yard belonging to the chappell of goddesse *Diana Lucina*, there is yet to be seen a Lote tree standing before the said chappell, built in the yeare of the Anarchie, what time as Rome stood desolate of all magistrates, and that was 369 yeares after the foundation of the citie: but how much more auncient this tree is than the said temple, God knoweth: for elder it is without all question, considering that of the groue or tuft of trees there growing, which the Latines call Lucus, the said goddesse *Diana* tooke her name * *Lucina*. Now it is 450 yeares or thereabout, since that time, and so old it is doubtlesse. Another Lote tree there is and elder than that, but the age thereof is likewise vncertain: known it is by

* *Gratia Lucina deæ dedit hæc tibi nomina Lucus.* Ouid.

by the name Capillata, [*i.* hairie:] so called, because the haire of the vestall Nuns heads is vsually thither brought, & there consecrated: and yet is there a third Lotus at Rome in the court-yard and cloister about the temple of *Vulcan*, which *Romulus* built for a perpetuall monument and memorial of a victorie, and defraied the charges out of the tenths of the pillage and spoile that he won from his enimies; and this tree is at least full as old as the citie of Rome, if it bee true that *Masurius* writeth. The roots thereof, passing along the street where the Burgeoises vse to keep their residence, doe reach as farre as the stately market-place or Hall of *Cæsar*. There grew by it a Cypresse tree also of the same age, the which by an ouersight and carlesse neglect, fell downe no longer since then the last yeare of *Nero* the Emperour. But why stand wee long hereupon? there is an Holme growing in the Vatican, elder than Rome it selfe, with a plate of brasse vpon it engraven in Tuscan letters, containing an inscription or title: whereby it appeareth, that euen in those daies the said tree for antiquity, was worthy of peoples deuotion. Moreouer, it is well knowne, that the Tybertines are more antient than the Romans, and their citie Tybur founded many a yeare before Rome: and yet certain it is, that there be yet three Holmes there remaining aliue, elder than *Tyburtus* himselfe, their first founder: vpon which trees (as the voice goeth) he obserued the flight of birds, and thereby tooke his auspices and warraht from the gods to build the said citie. And (by report) the sonne he was of *Amphiaraus*, who died at Thebes an hundred yeares before the Trojane warre. Writers there be who affirme, that both that Plane tree which groweth before the temple of *Apollo* at Delphos, was set by king *Agamemnon* owne hand: as also another in the second groue of Caphys in Arcadie. Furthermore, at this day there be trees neere vnto the streight of Callipolis, sometime called Hellespontus, ouer-against the citie of the Ilians, where old Troy stood, growing close vnto the tombe or sepulcre of *Protesilaus*, which euery fourteene yeres so soon as they are shot vp so tall only as they may seeme to discouer and see the citie Ilium, immediatly begin to wither and fade, and afterwards spring againe and grow anew vnto that age and height aforesaid. Hard by the citie of Ilium, there be certain Okes also (as folke say) neer vnto the tomb of *Ilus*, which were then planted or set of acornes, when Troy began to be called Ilium. It is reported moreouer, that the Oliue tree remaines yet aliue at Argos, vnto which *Argus* tied lady *Io*, after she was transformed or turned into an Heifer. About Heraclea in Pontus, there be certaine altars erected to the honor of *Iupiter* surnamed *Stratius*, ouer which there stand two Okes, both set by the hands of *Hercules*. In the very same tract there is an hauen, ennobled and renowmed by the name of *Amycus* the K. of the Bebrycians there slaine. His tombe, from the very day of his sepulture, hath been ouershadowed with a Bay tree (planted there and then for that purpose) which the people of that countrey do call The raging or mad Lawrell; for pluck but a branch or twig thereof be it neuer so small, and carie it into a ship, all the marriners and passengers within, will fall a brawling, and neuer agree vntill it be cast out and throwne away out of the vessell, that was brought thither from the tree aforesaid. Of a certain region we haue before written, called Aulocrene, lying in the way between Apamia and Phrygia; & there the paisants of that countrey can shew you that very Plane tree, on which *Marsyas* the musitian hung himselfe in a melancholly mood for that he was ouermatched in his owne cunning and professed skill, by *Apollo*: and surely like it is, that euen then he made choise of that tree for the bignes: ouer and besides, in the Isle Delos, there is a Date tree to be seen, which hath remained there euer since that the said god *Apollo* was borne and reared there. The wild Oliue tree at Olympia (whereof *Hercules* ware the first coronet or guirland) is kept and tended still with great deuotion. The very same Oliue tree also (by folks saying) continueth this day at Athens, which sprung vp at the very time that *Minerua* and *Neptune* stroue together about giuing the name to the citie Athens. And thus much of long-liued trees.

Contrariwise, Pomgranat trees, Fig trees, and Apple trees, liue a very short time: & of these, the hastie kind or Ienitings, continue nothing so large as those that bear and ripen later: neither yet those that carie sweet fruit, last so wel as they that bring forth fower. The Pomgranat tree also with the more pleasant fruit, is shorter liued than the other. The like is to be said of Vines, and namely, such as bear greater burden of grapes & yeeld most wine. Howbeit *Gracinus* saith, That there haue been vine trees known to liue threescore yeres. It seems also, that trees which come vp in waterish and moistplaces, are not of any long continuance, but soone die. In deed Bay trees, Apple trees, and Pomgranat trees, do age & looke old quickly; howbeit they spring

fresh again from the root. Well then, the Oliue trees hold out life and liue very long: for after G the common opinion and agreement of all writers, they continue ordinarily 200 yeares. There is a little hil named Carne within the territory of Tusculum, not far from Rome city side, clad and beautified with a goodly groue and tuft of Beech trees, so euen and round in the head, as if they were curiously kept, cut, and shorne artificially with garden sheares: which groue was consecrated in old time to *Diana*, by the common consent of all Latium, which did their deuotions there. In it there was one especiall faire tree aboue the rest, which *Postumus Crispus*, a man in our daies of great authoritie (as hauing been twice Consull in his time, & reputed an excellent Orator, who also afterward mounted to higher place of reputation by marrying *Agrippina* the Empresse, by which match he became father in law to *Nero* the Emperor) cast a fancie and extraordinar ie liking vnto: insomuch as he was wont not only to take his repose and lie vndernit, H to sprinckle and cast wine plentifully vpon it, but also to clip, embrace, and kisse it otherwhiles. Neere adioining as a neighbour to the said groue, there is an Holme, which of it selfe alone is much renowmed: it beareth in compasse about the butt therof 35 foot, and fends out ten monstrous big armes from the bodie, which may goe well enough for as many trees, and those euery one so great as it is wonderfull. Surely this one tree alone (a man would say) resembled a whole wood.

Moreouer, there is nothing more certaine than this, that Iuie killeth trees. The like is to be said (in some sort) of the Misseltо, although it is generally thought, that the harme thereby is not so soon seen. And this you must thinke, that this Misseltо is not to be taken for the fruit of a tree, and therfore as great a wonder it is in nature, as any other: for some things there be, that I not willing to grow out of the earth, engender in trees, & hauing no proper place of their own habitation to seat themselues in, sojourn as it were & make their abode with others, and of this nature is the Misseltо. Also, in Syria there is a certain hearbe named *Cadytas, which windeth about, not trees onely, but also very bushes and thornes: likewise, all about the pleasant vale Tempe in Thessalie, you shall haue a kind of Ferne called Polypodie, to doe the same: also, the Pulse named Dolychos, which is Fasels or Kidney beanes, and the wild running-laced Thyme, Serpillum. Semblably, that which the Greeks cal Phaunos: the very same, that after a man hath cut and proined the wild Oliue, engendreth thereupon. The like is to be said of Hippopheston which groweth vpon the Fullers thorne or thystle: it beareth certaine little heads and hollow knobs with nothing in them, smal leaues, and a white root, the juice wherof is singular good to K euacuate and purge the bodie, for the diuersion of ill humors, in the falling sickneſſe. But to return againe to Misseltо, there be three kinds thereof. For that which groweth on the Firre and Larch tree, is called Stelis in Eubœa, and Hyphear in Arcadia. And as for that which properly is Misseltо indeed, most men are of opinion, that it groweth fast to the common Oke, the wild Robur, the Holme, wild Plumtree, and the Terebinth, and not lightly on any other trees. Howbeit, in greatest plenty it is seen vpon the Oke, and that is named Dryos Hyphear. A difference there is in the Hyhpear and Misseltо, on what tree soeuer they are found (except the Holm and common Oke) in regard of the sauor, which is strong and stinking in the one more than the other. The leafe of them both hath no pleasant smel, and in the Misseltо it is bitter, clammy, and viscous besides. Of the two, Hyphear yet is the better to feed sheep and such cattell fat: only at the first it purgeth yll humors, and makes them to scoure apace, but afterwards it fatteth them; I mean such as were able to bear the said purgation. But in case any of them were deeply tackt and infected with the rot, or other inward consuming disease, they can neuer endure the taking of the said Hyphear, but they die vpon it. The only fit time for this kind of curing them, by the way of purgiug, is in Summer, and that for 40 daies space together. There is moreouer, by mens saying, another difference in Misseltо: for that which groweth vpon trees, shedding their leaues in winter, loseth also his owne leaues; but contrariwise, it continueth alwaies green vpon such trees as hold their leaues all the yeare long. Moreouer, set or sow this Misseltо what way soeuer you will, it will neuer take and grow: it comes onely by the mewting of birds, especially of the Stockedoue or Quoist, and the Blackbird, which feed thereupon, and let it passe thorough their M body. And this is the nature of it, vnlesse it bee mortified, altered and digested in the stomacke and belly of birds, it will neuer grow. It exceedeth not at any time a cubit in heighth, notwithstanding it be alwaies greene and full of branches. The male beareth a certaine graine or berry: the female is barren and fruitlesse. But sometimes neither the one nor the other beareth at all.

Now

*Some take this for *Cassitha*, or *Cuscuta* Dodor.

A Now as touching Birdlime, it is made of the berries of Misseltoe, gathered in harueſt time before they are ripe; for if they should tarry still to take showres of rain, wel might they thriue and increase in bigneſſe, but their strength and vertue would be gon clean, for euer making any such glew or birdlime aforesaid. Being so gathered, as is beforesaid, they must be laid abroad a drying, and when they be once dry, they are braied or stamped, and so put in water to steepe, and let to putrifie for the space of 12 daies or thereabout. This one thing yet in the whole world is the better for putrefaction, and seruеth to good purpose. When this is done, the said berries thus putrified and corrupt, are beaten or punned once again with mallets, in running water; by which means when they are husked and turned out of their skins, the fleshy substance within, becommeth glutinous, and will stick too, in manner of glew. This is the way to make birdlime B for to catch poore birds by their wings, entangled therewith; which foulers vse to temper and incorporate with the oile of Walnuts, when they lift to set limetwigs to take foule.

And forasmuch as we are entred into a discourse as touching Messelto, I cannot ouerpasse one strange thing thereof vsed in France: The Druidæ (for so they call their Diuinors, Wisemen, & the state of their Clergy) esteeme nothing more sacred in the world than Misseltо, and the tree whereupon it breeds, so it be on Oke. Now this you must take by the way, These priests or Clergy men chose of purpose such groues for their diuine seruice, as stood only vpon Okes; nay, they solemnise no sacrifice, nor perform any sacred ceremonies without branches & leaues thereof, so as they may seem well enough to be named thereupon Dryidæ in Greek, which signifieth as much as the Oke priests. Certes, to say a truth, whatsoeuer they find growing vpon C that tree ouer and besides the own fruit, be it Misseltо or any thing else, they esteem it as a gift sent from heauen, and a sure signe by which that very god whom they serue giueth them to vnderstand, that he hath chosen that peculiar tree. And no maruel, for in very deed Misseltо is passing geason and hard to be found vpon the oke; but when they meet with it, they gather it very deuoutly and with many ceremonies: for first and formost, they obserue principally, that the Moon be iust six daies old (for vpon that day they begin their months and new yeares, yea and their seueral ages, which haue their revolutions euery thirty yeres) because she is thought then to be of great power and force sufficient, and is not yet come to her halfe light and the end of her first quarter. They call it in their language All-Heale, (for they haue an opinion of it, that it cureth all maladies whatsoeuer) and when they are about to gather it, after they haue well D & duly prepared their sacrifices and festiual cheare vnder the said tree, they bring thither two yong bullocks milk white, such as neuer drew in yoke at plough or wain, and whose heads were then and not before bound by the horn: which done, the priest araied in a surplesse or white vesture, climbeth vp into the tree, and with a golden hooke or bill cutteth it off, and they beneath receiue it in a white soldiers cassock or coat of armes: then fall they to kil the beasts aforesaid for sacrifice, mumbling many oraisons & praying deuoutly: that it would please God to blesse this gift of his to the good and benefit of all those to whom he had vouchsafed to giue it. Now this perswasion they haue of Misseltо thus gathered, That what liuing creatures soeuer (otherwise barren) do drink of it, will presently become fruitfull thereupon: also, that it is a soueraign counterpoison or singular remedie against all vermine. So vain and superstitious are many na- E tions in the world, and oftentimes in such friuolous and foolish things as these.

THE SEVENTEENTH BOOKE OF THE HISTORIE OF NATVRE,

WRITTEN BY C. PLINIVS SECVNDVS.

CHAP. I.

¶ *The wonderfull prices of some Trees.*

AS touching the nature of all those trees which of their owne accord doe grow, as well vpon the main land as the sea coast, we haue already treated sufficiently. It remaineth now to discourse of those which (to speake more properly) are made rather and forced by art and wit of man, than otherwise come by nature and of themselues. But before I enter inro this treatise, I canot chuse but maruel how it is come to passe, That those trees which for necessity & need we hauing taken from the wilde and brute beasts, and possessed in common with them (considering that men maintaine fight and scramble with them for the fruits that fall, yea and otherwhiles with the fowles of the aire, about those which hang vpon the tree) should grow to so excessiue a price, as to be esteemed among the principall delights of this world? And that this is so, appeareth by that most notable example (in mine opinion) of *L. Crassus* and *Cn. Domitius Ænobarbus*. This *L. Crassus* (a right renowmed Orator of Rome as any one of his time) had a stately and sumptuous dwelling vpon mount Palatine: howbeit that house of *Q. Catulus* (who defeated in battell the Cimbrians, together with *C. Marius*) went beyond it a faire deale in magnificence, and stood likewise within the pourprise of the same mount. But the goodliest and fairest Pallace knowne in that age, was that of *C. Aquilius* a Gentleman or Knight of Rome, scituate vpon the hill of Osiers, called Viminalis: in regard whereof there went a greater name of him, than for all the skill he had in the Ciuill Law, which was his profession. Yet of all those three, *Crassus* onely was challenged and reproched for that foresaid house of his. And in this manner is the storie deliuered: *Crassus* and *Domitius* (great personages both, and descended from most noble Houses in Rome) after they had beene Consuls, happened also to be chosen Censors together: and this fell out to be in the six hundred sixty two yeare after the foundation of the city: but during this Magistracie of theirs there passed many a foule day and bitter fit betweene them; so dissonant were their natures, and their conditions so farre vnlike. Now it fortuned vpon a time, that *Cn. Domitius* (as hee was hot and hasty man by nature, and carried an inward hatred besides in his heart, which soone is kindled and set on fire, yea and most insatiable, vpon emulation and enuy betweene Concurrents, such as they two were) reprooued *Crassus* verie sharpely for his excesse in expence, and namely, That any Censor of Rome should dwell in so stately and sumptuous a Pallace as he did; and euer and anon made offer to buy the House, and pay him downe-right for it an * hundred Millions of Sesterces: whereat *Crassus* (being a man quicke of spirit, and of a prompt and present wit, finely conceited withall, and not to seeke for a ready answer) tooke him at his word, and accepted of the offer; reseruing only six trees that grew about his house. Tush (quoth *Domitius*, replying againe) take those Trees away, and take all; if they be gone, I will none of the house though I might haue it for a single denier. Then *Crassus* hauing gotten the vantage and start of him, rejoyned and came vpon him thus: Tell me now I pray you good *Domitius*, whether of vs twaine giueth a scandalous example to the world? Whether am I my selfe (I say) offensiue, and deserue to be taxed and noted by mine own Censorship, who can be contented to liue quietly and louingly among my neighbours in mine owne house, and that house which came to me by way of inheritance from my father;

* *Millies Sestertium.* An incredible price for a dwelling house: and therefore as *Budæus* thinketh, this place must be corrected, by conference with *Val. Max.* who for (*millies*) hath (*sexagies*) which amounts little more than to the 20 part of the other summe.

father; or you rather, that for six trees bid 100 millions of Sesterces? Now, if a man be desirous to know, what these trees might be? truly they were no other but six Lote trees, very faire and beautifull indeed, but there was nothing in them commendable, saue only their spreading and casting a goodly shade. And verily, *Cæcina Largus*, a Nobleman and principal citizen of Rome, vsed many a time and often (I remember well) to shew me when I was a yong man, those trees about his house. And since our speech hath bin of such trees as liue very long, these I wote wel, continued for the space of 180 yeres after *Crassus* death, to the great fire that *Nero* caused to bee made for to burne Rome; fresh and green they were with good keeping, and looked yong still, like to haue liued many a faire day more, had not that prince hastened the vntimely death euen of trees also [as well as of citizens.] Now lest any man should think, that all the sumptuositie of *Crassus* consisted only in those trees, and that the furniture otherwise of his house was but mean and simple, and could minister vnto *Domitius* no matter of such contesting and reproofe, disposed as he was to quarrel and find fault: know he thus much, That the said *Crassus* had before that time set vp in the open hall of that house, foure goodly pillars of Hymettian marble; which in the yere of his Edileship were brought abroad to rich and beautifie the Theatre, the Stage and Shew-place of the solemne plaies by him set out: for as yet there had not bin in publicke place at Rome any marble pillars seen: lo how lately is come vp this excessiue expence in rich & glorious building, so common in these daies. See (I say) how in those times, faire trees beautified pallaces more than any thing els; insomuch, as *Domitius* for the want of six trees only, would not stand to the price that himselfe first made, no not to buy his very enemy out of house and home with it: but no maruel if trees were accounted of so highly, seeing that our ancestors in old time thought not scorn to take otherwhiles their syrnames from them. Thus that braue and valiant souldier came to be named *Fronditius*, who (maugre the beard of *Annibal*) swum ouer the riuer Vulturnus, with a chaplet of green leaues (answerable to his name) set vpon his head, and performed many feats of arms and worthie exploits against him. Thus they of the noble *Licinian* family had for their addition *Stolons* (*i.* the vnprofitable water-shoots that put forth from the root or tree it selfe, and neuer proue or come to any good.) And why so? For that one of the said house deuised the means to clense trees & vines of such superfluous twigs (the practise & feat of cutting which a way, is called Pampinatio) and therupon was one *Licinius* first sirnamed *Stolo*. Moreouer, our predecessors in antient time made good statutes and ordinances for the maintenance of trees: and expressely prouided it was by the laws of the 12 Tables at Rome, in these words, *That whosoeuer made wilfull waste, and cut downe any trees growing in another mans ground, should be peined in the court for a trespasse done, & forfeit for euery such tree, 25 pound of brasse money.* But what should we thinke of this? Did these law-makers trow ye, suppose or imagine that other wilde trees would euer haue growne to that high reckoning aboue named, and which now they are come vnto, who valued fruitfull trees at no greater price, and set the penalty for the trespasse, so low? But neuer maruell we any more hereat, considering to what a proportion Apple-trees, and such like are risen vnto. For there be many of them here about the city of Rome, in the villages neere adioining, which are set for a yearely rent of 2000 Sesterces; and one of them yeeldeth more profit and reuenue by the yere to the owner, than a pretty ferm in times past of good domaine, to the land-lord. Hereupon came the inuention of grafting trees: for this purpose haue we such bastard fruits intermingled one with another, of sundry kindes; as if Apples and other fruits were not for poore men to eat, but grew only for the rich. Hence forward now therefore will we shew the right, perfect, and absolute manner how to order and cherish them, that it may appeare by what means especially, such annuall commodity can be made of them, as is before-said. For the better performance of which discourse, I meane to leaue the common and ordinary way; neither will I handle the vsuall and vulgar manner of that point in husbandry, wherein euery man is perfect, and whereof no man maketh question: but deliuer such matters onely, as be vncertaine and doubtfull, whereby oftentimes folke are deceiued and beguiled. For to break my head or busie my brains in needlesse trifles, and therein to affect a kinde of curiositie, was neuer my manner yet, nor is it any part of my meaning and intention now. But before I doe enter into particulars, my purpose is to treat in generalitie of this matter, and touch briefely the consideration of heauen and earth both, so farre forth as may concerne in common all kindes of trees whatsoeuer.

CHAP.

Chap. II.

¶ Of the nature of the Skie respective vnto trees: and what quarter thereof they should regard.

TRees generally do like best that stand to the Northeast wind: for it nourisheth them well, causeth them to spread thick and grow euery way in length and breadth, and withall maketh the timber more fast and strong. But in this rule most men do erre, and be much deceiued; for in vnderpropping vines, the forkes would not be set opposite against that wind to hinder the blast thereof; a point that is to be obserued in regard of the North wind only. Moreouer we find by experience, that if trees haue a kindly winter and cold season in their due time, their wood will be more firme, and so likewise will they bud and shoot out best: otherwise, if the warm Southerne winds blow vpon them much, ye shall haue the trees proue soft and feeble, and their blossoms come to nothing, blooming as they do before time: for if it chance that presently after their floures be fully out, and ready to shed, there fall any store of raine, the fruit is quite gone for that yeare. And as for Almond trees and Peare-trees, if it be but close and cloudy weather only, without any raine, or the wind stand South when they floure, sure they be to lose their fruit. Certes, a glut of rain in May, at what time as the Brood-hen star called Virgiliæ doth arise, is exceeding hurtfull to Vines and Oliue-trees: for then is the very season of their knitting or conception. Then be the foure decretorie or criticall daies, that giue the doome of Oliue trees, either to good or bad: this is the Southerly point of filthy, foule, and glowmie weather, wereof wee haue spoken before. Moreouer, all manner of graine feeleth the inconuenience of Southern wind at the time of their ripening. Well may corne make hast and ripen sooner, but it shal neuer haue the kind maturity and perfection as it ought. As for the cold pinching black frosts and Northern winds, which blow out of season, come they early or come they late, they be hurtfull all. But if the wind stand Northeast in winter, there is nothing so good generally for all fruits of the earth. And verily, a good shower now & then during that time, wil do no harm; and that men wish for rain then, the reason is euident: for why? trees with bearing of fruit, are drawne dry and haue lost their naturall moisture, with shedding their leaues they be poore and feeble; so that it is kind for them to be hungry then, and to haue a greedy appetite to new food, which is raine. Now if the winter be open and warm withal, that so soone as the trees haue don bearing, they rest not between, but conceiue again presently vpon it (that is to say, bud & spurt anew, yea, and fall afresh to blossome, whereby they haue another euacuation that way also, to spend their sap and radicall moisture) we find by experience, that there is nothing in the world so bad for them. Nay, if many such yeres come together, immediatly one after another, the very trees themselues will die; for who can looke for better, when they are thus pined and famished? He then* whosoeuer he was that said, Husbandmen were to wish for faire winters: surely he was no friend therein to trees, nor neuer praied for them: neither are wet Mid-summers good for Vines. But in truth, That winter dust should cause plentiful harueſt, was a word spoken in a bravery, and proceeding from a pregnant wit and jolly spirit: for otherwise, who knoweth not, that euery man (wishing well to trees and corn indifferently) praieth, that snow might lie long vpon the ground? The reason is, for that not only it keepeth in & encloseth the vitall breath & soule (if I may so say) of the earth, ready to exhale out and vanish away, yea, and drieth it back again into the blade and root of corn, redoubling therby the force and vigor thereof: but also becaus it both yeeldeth moisture and liquor thereunto gently by little and little, and the same withall fine, pure, and passing light: considering, that snow is nothing els but the some or froth of rain-water from heauen. This humor therefore, not falling forcibly all at once to drown the root, ne yet washing away the earth from it (but distilling drop-meale a little at once, in that proportion and measure as thirst requireth and calleth for it) nourisheth all things, as from a teat or pap; nourisheth (I say) and neither drencheth nor ouerfloweth them. The earth also for her part, by this means wel soked, swelleth and boueth as it were with a leauen, and lieth thereby more light and mellow: thus being full of juice and moisture it selfe, & not barren, but well repleniſht with seeds sown, and plants suckled, thus continually in her womb; when the open time of the spring is once come to discharge her, she sheweth her selfe fresh and gay, and willingly entertaineth the warme weather of that season.

*Virgil.

By

By this meanes especially, we see how corne liketh well vpon the ground, and thriueth apace euery where, vnlesse it be in climates where the aire is alwaies hot, as in Ægypt. For continuance and ordinarie custome alone effecteth the same there, which the season of the time, & moderat temperature of the aire elswhere. And in one word, be the place what soeuer, passing good it is to keep away the thing that is hurtfull. For in the most parts of the world it happeneth, That when either corn is winter-proud, or other plants put forth and bud too earely, by reason of the mild and warm aire; if there follow any cold weather vpon it, all is nipped, blasted, and burnt away. Which is the cause, that late winters do harme vnto the wild trees also in the forest. The more paine and sorrow likewise such trees abide, by reason of their owne thicke branches shading one another, and not easily admitting the warme Sun; and destitute they are besides of mans helping hand to cure them: for growing as they do in wild and desart forests, impossible it is to lap and wrap them about with wreaths and thumb-ropes of straw, and so to cherish and defend them when they be yong and tender. Well then, to conclude this matter: Winter raine principally is seasonable and good for all plants: and next to it the dewes and showers that fal immediatly before their sprouting time: a third sort also there be of showers that come when fruits hang on the tree, and are in their growth, yet not too soon, namely, before they bee strong and able to abide some hardnesse.

As touching trees which be late-ward and keep their fruit long ere they ripen, such also as require store of nourishment and more food still, as namely, the Vine, the Oliue, & Pomgranat trees; it is good for them to be watered with raine in the later end of the yeare. And to say a truth, euery kind of tree requireth a seuerall rain by it selfe, in due season, for that some ripen their fruit at one time, and some at another: so as a man shall see ordinarily the selfe same showers, to hurt one sort, and to help another; yea, and that diuers effect is to be seen in trees & fruits of the same kind, as for example, in Pyrries: for the late-ward of them call for raine at one time, and the hasty or forward at another, and yet indifferently all doe require alike the seasonable showers of winter, as also those before budding time. In which regard, the winds Northeast are better than the Southern, and such winters be most kindly. Semblably, by the same reason the Mediterranean or mid-land parts of any country are for this purpose preferred before the maritime or sea-coasts (as being for most part colder) the high & hilly regions before the plaines and vallies: and last of all, the night rains are held to be more profitable than those that fall by day time: for lands new sowne, and any yong plants, inioy more benefit by such shoures in the night, for that the Sun commeth not so presently vpon them againe to dry and drink vp all the moisture.

Hereunto ought to be annexed the consideration of Vine-yards, hort-yards, and Groues, as touching their scituation, and namely, what part of the heauen they should regard. *Virgil* condemned altogether the planting of any trees, respective to the West: some haue chosen that quarter before the East. And this haue I obserued, that in most mens opinion, the South is best. But if I should speak what is mine own conceit indeed, there can no generall and infallible rule be giuen concerning this point, for to hold alwaies. All our skil and art herein must be directed by the nature of the soile, the disposition of the climat and temperature of the aire. In Africke although it be nothing profitable for Vine-yards to be planted so as they look into the South, yet kind it is & wholesome for the Vine-planter and husbandman, by reason that all Africke lieth vnder the Meridionall or South climat. And therefore he that shall set vines there, either into the West or North (howsoeuer *Virgil* alloweth not of the West) shall make an excellent, medley, between the temperature of that aire and the nature of soile together. As for the North no man seemeth to make any doubt or question, but that vines so planted, wil proue right well. And verily there are not found any vines to prosper better, or to beare more fruit in all Italy tha nin that tract which lieth on this side, and vnder the Alpes: and there for the most part the Vineyards are so planted.

Moreouer in this case the winds would be much considered, for in Languedoc or the prouince of Narbone, in Liguria and part of Tuscane, they are reputed vnskilfull husbandmen that plant any vine-yards directly vpon the Northwest wind: but it is counted contrariwise a special point of prouidence and good husbandry, to cast it so, as the said wind may flanke it on the side. For this is the wind, which in those quarters qualifies and tempereth the excessiue heat of the summer: howbeit, many times, so violent and blusterous he is, that hee beareth downe before him the

the roofe of many a house, and carrieth it cleane away. G

Chap. III.

¶ *The societie of the skie and aire with the earth, respective to trees.*

SOme men do force the skie for to be obedient & conformable to the earth: as namely, when planting in dry grounds, they haue regard to the East and North: and contariwise, when in moist places they respect the South. Moreouer, it falleth out, that they be driuen otherwhiles to follow the nature of the very Vines, and thereby to be ruled: wherupon, in cold ground they plant such as be of the hastie kind, and soone ripen their grapes; to the end that they may come to their maturity and perfection, before cold weather comes. As for such Vines and trees H bearing fruit, as cannot abide dews, those they set in to the East, that the Sun may soon dispatch and consume the said dew: but looke what trees do loue dewes, and like well therewith, those they will be sure to plant against the West, or at least wise toward the North, to the end they may inioy the full benefit thereof. All others againe (grounding in manner vpon natural reason only) haue giuen counsell to set as well Vines as Trees, into the Northeast. And *Democritus* verily is of this mind, that such fruits will bee more pleasant and odoriferous.

Chap. IIII.

¶ *The quality of sundrie regions.*

AS touching the proper seat of the Northeast wind, and of all other winds, we haue spoken already in the second booke: and our purpose is in the next following, to treat of the rising I and falling of signes and notable starres, of other Astronomical points also concerning heauen. Now in the mean time for this present, it is sufficient, that in the former rule of the North wind, we seem to rest and resolue vpon the apparent and euident argument of the wholesome and healthfull climate of the heauen: forasmuch as we see, that euermore all such trees as stand into the South, soonest shed their leaues: the same reason also is to be giuen of those that grow vpon the sea coasts: and albeit in some places the winds blowing from thence, and the very aire of the sea be hurtfull, yet in most parts the same are good and profitable. Certaine plants and trees there are, which take pleasure to be remot from the sea, and ioy to haue the sight of it only a farre off: set them neerer to the vapors and exhalations ascending from thence, they will take harm and mislike therewith. The like is to be said of great riuers, lakes, and standing pooles. As K for those which we haue spoken of, they either burn their fruit with such mists, or refresh and coole such as be hot with their shade, yea, & take joy and prosper in the frost and cold. And therfore to conclude this point, the surest way is, to beleeue & trust vpon experience: thus much for this present, concerning the heauen: our next discourse will be of the Earth and Soile, the consideration whereof is no lesse difficult to be handled than the other.

First and formost, all grounds are not alike good for trees and most kinds of corne. For neither the black mould (such as Campain standeth vpon much) as in all places best for Vines; or that which fumeth and sendeth vp small and thin mists: neither is the red veine of earth any better, how soeuer there be many that commend it. The white earth or chalkie marle, the clay also within the territory of Alba and Pompeij, for a vineyard, are generally preferred before all L other countries (although they be exceeding fat, which in that case is otherwise vsually reiected.) On the other side, the white sand about * Ticinum: likewise, the blacke mould or grit, in many places, as also the red sandy ground, although it be wel mingled & tempred with fat earth are all of them nothing to the purpose for increase & fruitfulnesse. And herein must men take heed, because oftentimes their judgement may faile when it goeth but by the eie: for wee must not streight waies conclude, that the ground is rich & battle, wheron we see goodly faire & tall trees to grow, vnlesse it be for those trees only: for where shal we meet with any, higher than the Firre? & is there a tree again that possibly can liue where it doth? No more is rank grasse & plentifull forrage a true token alwaies of a good ground: for there is no better pasture nor grasing to be found than in Almaine; and yet dig but vp the greene sourd and the thinnest coat of turfe M that may be, ye shal presently come to barren sand vnder it: ne yet is it by & by a moist ground, that hath vpon it deepe grasse and hearbes shooting vp in height: no more verily, than a fat and

* i Pauie.

A and rich soile is knowne by sticking to one fingers; as appeareth plainly in all sorts of clay. And verily, no earth doth fill vp the trenches euen againe, out of which it was cast, that thereby a man might find out whether the ground be sad, or hollow: and generally all sorts thereof will cause yron to rust that shal be put into it. Moreouer, there is no weighing of earth in ballance, to know by that means which is lighter or heauier: for who could possibly euer set down the iust weight that earth should haue? Againe, the ground that is cast vp into banks by the ouerflow of great riuers is not alwaies commendable: seeing that some plants there be that decay, if they be set in water. And say that some such bank were ground good enough, yet it continueth not so, long; vnlesse it be for Willowes and oisiers onely. But if you would know a rich ground indeed, one of the best arguments and signes therof is this, when you see it to bring forth a thick & strong haulme or straw, such as vsually groweth in that noble territorie Laborine within Campaine; B which is of that bignesse, that the people of the country vse it for fewell in stead of wood. Now, this ground, so good as it is, where & whensoeuer we haue found it, is hard enough to be tilled, and requireth great labour and husbandry, putting the poore husbandman to more paines in manner with that goodnesse of it, than possibly he could haue with any defects and imperfections thereof. For euen the hot earth, called by the name of Carbunculus, which vseth to burn the corne sown therupon, may be helped & remedied (as it is thought) by setting it with plants of poore & hungry vines. The rough grauell stone which naturally will crumble as grit, many writers there bee that allow and commend, for vines. As for *Virgil*, he findeth no fault with the ground that beareth fern and brake, for a Vineyard. The earth that is brackish, and standeth much vpon saltpetre, is thought to be more sound for many plants than others; and in regard of C vermine that vse to breed therein, much safer also. Neither do high banks and hils remaine vntilled and naked for want of good husbandry, if so be a man haue the cast of it, to eare & breake them vp skilfully. As for the plaines, they are not all of them exposed to the Sun or subiect to the wind more than need requireth. And to speake of frosts, mists and fogs, there be Vines (as we haue said already) which are nourished and fed with them. And to conclude, hereby we may see, that in euery thing there is some one deep secret or other, wherein it behoueth each man to employ his spirit and set his mind for to search them throughly and find them out: what shall we say then to this, That oftentimes those things which haue bin approoued by long experience and many obseruations, become otherwise, and change their vsuall manner? In Thessalie about Larissa, the whole region, by reason of a lake that was let out and drained drie, prooued D much colder: and the Oliues which there grew before, left bearing and died all, vpon it. In like sort, neer vnto Ænos, the Vines were all scorched and burnt, by occasion, that the course of the riuer Ebrus was brought neere vnto them, an accident that beforetime neuer befell vnto them. Semblably, about the citie Philippi, the whole country being made drie by sluces and trenches artificiall; altered withall the whole disposition of the aire and weather, and changed the very habite of the heauen aboue their heads. But in the territory of Syracusa, the forraine Coloners that thither came to inhabit and practise husbandry, by ridding the ground from all the stones, marred all the corn in the country; so mirie and durtie it was by that meanes, vntil such time as they were driuen to lay the stones againe where they had them. In Syria, the husbandmen goe lightly ouer with their plough, & take no deep stitch in making their furrowes, for feare of the E stony rocke lying ebbe vnder the good ground, which in Summer season will burne all their graine and seed sowne there. Now, there be certain parts of the world, where a man shall see one and the same effect to proceed both of extreame heat, and also of excessiue cold. Thracia is exceeding cold, and thereby plentifull in corne. Africke and Ægypt be as hot, and yet come not after it for fertilitie in that kind. In Chalcia, an Island belonging to the Rhodians, there is one place aboue the rest so fruitful, that the Barly which was sowed in the due time & season of the yere, they mow once, and presently put it into the ground againe; which will be ready to be cut downe the second time, with other corne in haruest. In the Venafrane tract within the realme of Naples, the grauellie ground is thought meetest for Oliue trees, & therin they bear most plentifully: contrariwise, about Bœtica in Spaine, the fattest soile is best for that purpose. The ex- F cellent grape that makes the good Punicke wine, ripeneth soon vpon the very rockes: but the Cæcube Vines stand soaked & drenched (as it were) in the marish low grounds of Pomptinum. See what a difference and diuersitie there is in causes, to make this variety in sundry plots of ground! *Cæsar Vopiscus* being conuented before the Censors, and there pleading his cause, affirmed

med openly, that the plaines of Rosea were the very fat of Italy, and resembled the kell or leafe of a fed and franked swine: wherein (quoth he) if a man left forks or props to day, they will bee ouergrowne and couered with grasse by to morrow. But surely, this ground is good for nothing but pasture. Yet notwithstanding, Nature would haue vs still to learne and grow skilfull euery day more than other: and for that intent she hath laid open the defects and imperfections of the ground, euen there, whereas the commodities thereof be neither so certain, nor so well knowne. And therefore let vs in the first place speake of those faults for which the earth is blamed.

Chap. V.

¶ *Sundry sorts of earth.*

IF a man would know which is a lean, hungry, & bitter ground, there is no better experiment and proofe thereof, than by the blackish, misliking, and vnkind herbs growing thereupon: like as, when they come vp scortched and burnt, they shew a cold soile: also, when they seem ill fauored and vnpleasant to the eie, the earth no doubt is soked and drowned in wet. As for red sandy ground and clay, you need go no farther than to your owne eie-sight. And such soiles as these be, is of all other, hardest to be wrought and tilled; they so clog and load both the harrow teeth and the plow-shares, with huge and heauie clods. Howbeit, the ground that is thus churlish to be eared and husbanded, is not alwaies bad and naught for increase. But it fareth cleane contrary with the pale and wan ashie earth, as also with the white sandy soile: for the barren ground is soon found by a thicke and callous crust that it hath, euen at the first dent of culter or stroke of mattocke.

Cato setteth down briefely, as his maner is, all the defects and faults of ground in these words: *Take heed* (quoth he) *of a rotten ground, and see that you stir it neither with cart, nor touch it with beast.* What should we think was his meaning by this term of his, that he should feare rotten ground so much, as to forbid in a manner to tread and goe thereupon? Let vs call to mind the rottennesse that is in wood: and thereby shall we find those faults that he abhorreth and detesteth so much in the earth. In good faith, by rotten earth hee vnderstandeth dry, spungeous, and full of holes, rugged, hoary, eaten, old, and hollow. So as in that one significant word, (*Cariosa*) hee said more than could be expressed possibly by any multiplicity of language what soeuer: for if a man would rip vp to the quicke the imperfections that are in grounds, he should find, that some pieces there be of it that may be termed truly old and ouerworne, not for any age (for who can say properly, that earth is subiect to old age) but by reason of their naturall defects: in regard whereof, a ground may be weake, feeble, barren, and no longer good for to bring forth any thing. The same *Cato* iudgeth, That ground to be principall which lieth at the foot of an hill, and runneth forth in manner of a plaine, into the South, which is the very scituation of all Italy: and by a blackish and swart earth, which he calleth [*Pulla*] he meaneth a gentle, tender, and mellow soile. And this we will determine to be the best simply both for worke or tillage, and also for gaine and increase: now let vs (if ye please) stand a little vpon this word *Tenera* [*i.* Tender] which he vseth in this sence: you shall find a maruellous signification thereof: and that he implieth thereby, as much as your heart can wish to be in a ground. That is it, which is so temperat in fertility, that is it which to be wrought is so gentle, soft, pliable, and mellow; neither wet, nor yet dry and thirsty. Now doth this ground shine againe after the plough-share, resembling that veine of earth, which *Homer*, the very fountaine and spring of all good wits, reported to haue bin engrauen by a * god, in the armour (of *Achilles*:) adding moreouer, that the said earth looked black withall: wherein hee obserued a wonderfull piece of workemanship, notwithstanding it was wrought in gold. This is that ground, I say, which beeing new broken and turned vp with the plough, the shrewd and busie birds seeke after, and goe vnder the plough-share for it: this is it, that the very Rauens follow the plough-man hard at heeles for, yea, and are readie for greedinesse to pecke and job vnder his very feet. And here, in this place I cannot chuse but relate the opinion that is currant among our rojotous and delicate gallants: which some other thing also making for our purpose, in the discourse of this argument which wee haue in hand. Certes *Cicero*, a man reputed (as he was no lesse indeed) for a second light of all good learning and literature. Better are esteemed (quoth hee) the sweet compositions and ointments which tast of earth, than of saffron: where note by the way, that this great Clearke chose to vse the word of

* Vulcan.

A of tast rather than of smell; in such odoriferous perfumes and mixtures. Well; to speake at a word, surely that ground is best of all other, which hath an aromaticall smell and tast with it. Now if we list moreouer to be better instructed, what kind of sauour and odour that should be, which we would so gladly find in the earth; we may oftentimes meet with that scent, euen when she is not stirred with the plough, but lieth stil and quiet, namely, a little before the sun-setting, especially where a rainbow seemeth to settle & pitch her tips in the Horizon: also, when after some long and continuall drought, it beginneth to rain; for then being wet and drenched therewith, the earth will send vp a vapor and exhalation (conceiued from the Sun) so heauenly and diuine, as no perfume (how pleasant soeuer it be) is comparable vnto it. This smell there must be in it when you ere it vp with the plough: which if a man find once, he may be assured it is a
B right good ground; for this rule neuer faileth: so as (to say a truth) it is the very smel and nothing els, that will iudge best of the earth: and such commonly are new broken grounds, where old woods were lately stocked vp: for all men by a generall consent, do commend such for excellent. Moreouer, the same ground for bearing is held to be far better, when soeuer it hath rested between, and either lien ley or fallow; whereas for vineyards it is clean contrary: and therefore the more care and diligence is to be employed in chusing such ground, least wee approoue and verifie their opinion, who say, That the soile of all Italie is alreadie out of heart and weary with bearing fruit. This is certaine, that both there and elsewhere, the constitution of the aire and weather, both giueth and taketh away the opportunitie of good husbandrie, that a man cannot otherwhiles do what he would: for some kind of grounds there is so fat and ready to resolue in-
C to mire and dirt, that it is impossible to plough them and make good worke, after a shower of raine. Contrariwise, in Byzacium a territory of Africke, it is far otherwise: for there is not a better and more fruitfull piece of ground lieth without dore than it is, yeelding ordinarily 150 fold; let the season be dry, the strongest teeme of oxen that is, cannot plough it: fall there once a good ground shower, one poore asse, with the help of a silly old woman drawing the plough-share at another side, will be able to go round away with it, as I my selfe haue seen many a time and often. And whereas some great husbands there be, that teach vs to inrich and mend one ground with another, to wit, by spreading fat earth vpon a lean and hungry soile; & likewise by casting drie, light, and thirstie mould, vpon that which is moist and ouer-fat; it is a meere follie and wastfull expence both of time and trauaile: for what fruit can he euer looke to reape from
D such a mingle mangle of ground?

Chap. VI.

¶ *Of the earth which Britaine and France loue so well.*

THe Britaines and Frenchmen haue deuised another meanes to manure their ground, by a kind of lime-stone or clay, which they call Marga [*i.* Marle.] And verily they haue a great opinion of the same, that it mightily inricheth it & maketh it more plentiful. This marle is a certaine fat of the ground, much like vnto the glandulous kernels growing in the bodies of beasts, and it is thickned in manner of marrow or the kernell of fat about it.

Chap. VII.

¶ *The discourse of these matters continued according to the Greekes.*

THe Greekes also haue not ouerpassed this in silence: for what is it that they haue not medled withall? The white clay or earth wherewith they vse to marle their grounds in the territorie of Megara, those onely I meane which are moist and cold, they call Leucargillæ. These marles (all the kind of them) do greatly inrich France and Britaine both, and therefore it would not be amisse to speak of them more exactly. In old time there were two sorts therof, and no more: but of late daies (as mens wits are inuentiue euery day of one thing or other) they haue begun to find out more kindes, and to vse the same: for there are now diuers marles, the white, the red, the Columbine, the clay soile, the stony, and the sandy: and all these are but two in nature, to wit, either hard and churlish, or else gentle and fat. The triall of both is know ne by the handling, and a twofold vse they yeeld; either to beare corne onely, or els for grasse and pasturage. The stonie or grauelly soile is good only for to nourish corne; which if it be white withall,

withall, and the pit thereof found among springs or fountains, it wil cause the ground to be in- G
finite fruitfull; but it is rough in handling, and if it be laid too thick vpon the lands or leyes, it
wil burn the very ground. The next to it is the red marle, called also Capnumargos, which hath
intermingled in it a certaine small stony grit full of sand: This stony marle the manner is to
break and bruise vpon the very lands; and for the first yeares, hardly can the straw be mowne or
cut downe for the said stones. Lighter is this marle than the rest by the one halfe, and therefore
the cariage thereof into the field is least chargeable. It ought to be spred and laid thin, & some
thinke that it standeth somewhat vpon salt. But both the one and the other will serue well for
fifty yeares, and the ground inriched thereby, will (during that time) yeeld plenty as well of
corne as grasse.

Chap. VIII. H

¶ *Sundry sorts of Earth and Marle.*

OF those marles which are found to be fat, the white is chiefe; and thereof be many sorts. The most mordant and sharpest of them all, is that whereof wee spake before. A second kind there is of chalkish clay, which our gold-smiths vse (called Tripela:) this lieth a great depth within the earth, insomuch as many times men are driuen to sinke pits 100 foot deep, for it; and those haue a small and narrow mouth aboue, but within-forth and vnder the ground they be digged wider, by reason that the veine thereof runneth many waies, in manner of other mettall mines. This is the marle so much vsed in Britain: the strength therof being cast vpon a land, will last 80 yeres; and neuer yet was the man known that herewith marled the same I ground twice in all his life time. The third kind of white marle, is that which the Greekes call Glischromargon: it is no other than the Fullers chalkie clay mixed with a viscous and fatty earth. The nature of it, is to breed grasse better than to beare corne: for after one crop of corne is taken off the ground in haruest, before seed time is come for winter grain, the grasse wil be so high growne, that a man may cut it down and haue a plentiful after-math for hay: and yet al the while that it hath corn vpon it, you shall not see it to beare any grasse besides. This marle continueth good 30 yeres: if it be laid ouer-thick vpon a land, it choketh the ground in manner of
*Cumine. * Cumine. The Columbine marle, the Gauls call in their language, by a name borrowed of the
Greeks, Pelias, (*i.* Doue or Pigeon marle:) it is fetched out of the ground in clots and lumpes, K
like as stones be hewed out of quarries: with Sunne and the frost together, it will resolue and
cleaue into most thin slates or flakes. This marle is as good for corne as for herbage. As for
sandy marle, it will serue the turne for want of other: yea and if the ground be cold, moist, and
weely, the husbandman will make choice thereof before other.

*Cymini. *Turneb.* reades *Signini*, & mea neth thereby shards of potters worke and such like rubbish.

The Vbians, vpon my knowledge, vse to inrich their ground and make it more battle (though their territory otherwise be most fertile) with any earth whatsoeuer; prouided alwaies that it be digged vp three foot deep at least, and laid a foot thick; a deuise that no other country doth practise: howbeit this soile and manner of manuring, continueth good not aboue ten yeres: the Heduans and Pictones, haue forced their grounds and made them most plentifull, with lime-stone, which is found also by experience to be passing profitable for vines and oliues.

To come now to the ordering of this piece of husbandry: the ground ought to be ploughed L
first, before marle of any sort be cast vpon it; to the end that the medicinable vertue & substance
thereof, might the sooner and more greedily be receiued into it. Now forasmuch as marle is at
the first ouer-rough and hard, not so free in the beginning as to resolue and turne into blade or
grasse, it had need of some compost or dung to be mingled with it: for otherwise, be it neuer so
rich, it will rather do harm than good to the ground, by reason that it is yet strange and not ac-
quainted therewith: and yet help it this way as wel as you can, it will not bring forth any plenty
the first yere after it is laid on. Last of all, it skilleth much to consider the nature of the ground,
which you mean to marle: for the dry marle, forteth well with a moist soile; and the fatty, hit-
teth that which is dry and lean. But when the ground is of a middle temperature between both, M
it mattereth not whether you vse the white gold-smiths chalke, or the Columbine marle, for
either of them will serue well enough.

CHAP.

A

Chap. IX.

¶ *The vse of ashes vpon lands: of Dung: what graine or pulse sowne, doth make the ground more plentifull, and what burneth it.*

THe people dwelling beyond the Po, make such account of ashes for to inrich the grounds withall, that they prefer it before horse-muck, and such like: which dung (because they take it to be very light) they burne also into ashes for that purpose. Howbeit (as we haue said before) in one and the same corn-land, they vse not ashes and mucke both at once: no more doe they cast ashes in hortyards for to nourish yong trees, nor in fields, for some kind of corn. Some are of iudgement, that grapes are fed with dust: who also do cast dust vpon them when they be-
B gin to bloome, yea and bestrew dust vpon the roots as well of Vines as other trees. Certain it is, that in the prouince of Narbon they vse so to do, and they are assuredly persuaded, that grapes ripen better and the vintage commeth the sooner thereby: because in those parts dust doth more good than the Sun.

As for mucke, there be diuers sorts thereof, and in old time much vse there was of it; for in *Homer* we read, that long ago the good old king [*Laertes*] was found laying soile and dung vpon his land with his own hands. The first that deuised mucking of grounds, was (by report) *Augeas* a king in Greece: but *Hercules* diuulged the practise thereof among the Italians, who in regard of that inuention immortalized their K. *Stercutius* the son of *Fauuus*. *M. Varro* esteemeth the dung of Blackbirds (gathered out of their bartons where they be kept in mew) aboue al others.
C He highly magnifieth and extolleth it also, for that it bringeth forth so good forage to feed kine, oxen, and swine withall: auouching for certaine, that they will become fat beefe and pork with no meat sooner. We must thinke well therfore and hope the best of the world now adaies, since that our ancestors and forefathers so long ago had so great bartons and pens, that the dung of fouls there kept, was sufficient to help their hard and hungry grounds. In the second degree of goodnesse, *Columella*, rangeth Pigeons dung gathered out of Doue-cotes: the third place hee giueth to that of Hens, and other land pullen, rejecting altogether the dung of water-foule. Howbeit all other Authors (setting these two aside) attribute with one voice and consent vnto the excrements of mans body, the greatest praise for this purpose. Some of them prefer mans v-
D rine, and namely, when the haires of beast-hides haue bin soked therewith and quicke-lime to-gether in the Tanners pits. Others vse vrine alone by it selfe, only they mingle water with it a-gaine, but in greater quantitie a good deale, than they (whose vrine it was) did put to the wine when they drank it: and good reason too; for more need there is now to correct and represse the malice thereof, considering that besides the native malignitie of the wine it selfe, mans bodie hath giuen and imprinted into it, a strong and vnsauorie quality. Thus you may see how men labour, striue, and try conclusions, to feed and inrich the very ground, the best way they can deuise. Next vnto the ordure and vrine of mans body, the filthy dung of swine is most commended: only *Columella* condemneth it. Some praise the mucke of any foure-footed beasts what soe-uer, so they were fed with Tree-trifolie, called Cytisus. Others prefer the doung of Pigeons be-fore any other; in the second place that of Goats; thirdly of sheepe; then of kine and oxen; and
E lastly of cart-jades, mules, asses, and such like. Thus you see as well what difference there was in times past, between this dung and that; as also what were the rules (so farre as I can guesse and learne) whereby they went, in the vse and ordering thereof: for, to say a truth, the old way is best, euen herein as well as in other matters. Ouer and besides, the practise hath bin already seen in some of our prouinces (where there is so great store of cattell bred) to riddle and sift their dung ouer their ground through sieues, in manner of meale; and so in processe of time it loseth not only the stinking sent and ill-fauored sight that it had, but also turneth into a pleasant smel, and looketh louely withall. Of late, found it hath been by experience, that Oliue trees doe like and prosper very well, if the ashes of lime-kills especially be laid to their roots. *Varro*, among many other precepts, addeth and saith, That corne grounds would be manured with horse-dung,
F because it is the lightest; but medowes require compost that is heauier, and namely, made by beasts that haue barley for their prouender; for that such soile bringeth plentie of grasse. Some there bee also, that preferre the dung made by horses, before the mucke of kine and Oxen; likewise sheeps treddles, before Goats dung; but Asses mucke before all other, because

they eat and chew their meat moſt leiſurely. But daily experience teacheth the contrary, and teſtifieth againſt the one and the other. And thus much as touching compoſt of mucke. G

Furthermore, all men are of opinion, that nothing is better for the ground, than to ſow Lupines therupon; prouided alwaies, that before it cod, it be turned into the ground by the plough, ſpade, or two-piked yron forke: alſo when it is cut down, to make it into wads or bottles, and ſo to bury them at the roots of trees, and vines eſpecially. In countries where there are no cattell to better the lands, it is thought good to manure the ſame in ſtead of beaſts dung, with very hawme, ſtraw, and ferne. *Cato* hath a deuiſe to make an artificiall mucke or compoſt of litter, lupine ſtraw, chaffe, beane ſtalks, leaues and branches both of Maſt-holm and oke. He ſaith moreouer to the ſame purpoſe: Weed out of the ſtanding corn * Walwort [otherwiſe called Danewort] and Hemlock; alſo from about oſier-plots, plucke vp ranke weeds, or ground Elder; alſo Reeke or Sea-graſſe, and dead leaues or branches lying rotten vnder trees: when thou haſte ſo done, ſtrew, and lay a courſe of them vnder ſheep where they be folded. *Item*, If the Vine begin to decay and wax leane, burne the ſhreads and cuttings of the owne, and turne the aſhes vnder ground hard to the roots thereof. *Item*, where thou meaneſt to ſow any wheat or ſuch like breadcorn, draw thy ſheep thither, and there fold them. He ſaith moreouer, that the ſowing of ſome graine is as good as a dunging to the ground: for theſe be his very words, The fruit it ſelfe of the earth is a batling to the earth; and namely, Lupines, Beans, and Vetches, for they muck the lands: like as on the contrary ſide, Chiches do burn the ground, both becauſe they are plucked, and alſo for that they ſtand vpon ſalt. Semblably doth Barley, Fœnigreeke, Eruile, and generally all kind of pulſe which are pulled and not mowne downe. *Item*, Take heed (quoth *Cato*) that you ſet no pepins or kernels, where you meane to ſow corne. As for *Virgil*, he is of opinion, that the ſowing of Line-ſeed for flax, likewiſe of Otes and Poppies, do burne corne-ground and pill it out of heart. He alſo giueth rules as touching mucke-hills, That they ſhould be made in the open aire, within ſome hollow place where it may gather water; that they be couered ouer with ſtraw and litter, for feare they ſhould dry in the Sun; and laſt of all, that they haue a good ſtrong ſtake of Oke pitched and driuen in about the mids thereof, for ſo there will no ſnakes nor ſuch like ſerpents breed and ingender therein. Moreouer, as touching the ſpreading of mucke, and mingling it with the mould of a land, it is exceeding good to do it when the winde ſetteth full Weſt, ſo that the Moon then be paſt the full and in the Waine. But this rule many haue miſtaken and not conſtrued aright, ſuppoſing that they ſhould ſo do when the Weſtern wind Fauonius beginneth to riſe, and namely in the moneth of Februarie only; whereas indeed moſt cornlands require this point of husbandry in other moneths as wel. But looke what time ſoeuer you liſt to do it, be ſure in any hand that the wind do then blow from the Equinoctiall point of the Weſt, and that the moone then be in the waine, and drie withall. Haue regard to theſe rules and obſeruations, you will wonder to ſee the effects thereof, and what increaſe the earth thereby will yeeld.

Herba Alten. H I K

CHAP. X.

¶ *The planting and ſetting of trees: the manner how trees do grow, by a Sion ſliued and plucked from the root.*

L

NOw that we haue already ſufficiently treated of the conſiderations as well of the aire and skie, as of the earth, belonging vnto plants and trees; me thinks it were to good purpoſe to diſcourſe of the induſtry and artificiall meanes that men haue vſed to make trees grow: and verily we ſhall find no fewer kinds of them that come by mans hand, than of ſuch as nature it ſelfe hath brought forth; ſo kind and thankfull we haue bin to her, as to make recompence in this behalfe. Firſt and formoſt therefore this is to be noted, That all trees do grow either of ſeed ſowne, or of branches growing to the tree and couched in the ground, or of an old ſtocke from whence new imps may ſprout: alſo, either of a ſlip or ſprig plucked from another tree, and ſo laid in the ground; or of a young ſhoot, twig, impe, or Sion, engraffed in the very trunk of a tree, ſlit and clouen for that purpoſe. For I cannot chuſe but maruell much at *Trogus*, who was verily perſuaded, That about Babylon the leaues onely of Date trees beeing ſet or ſowne, would proouе trees. Now whereas there be ſo many deuiſes abouеſaid for to nouriſh trees, this you muſt vnderſtand, that ſome trees there be which will grow by many of theſe waies before ſpecified,

A fied, and others by them all. And verily the moſt part of this knowledge hath beene taught by Nature her ſelfe: for firſt of all, we haue learned by her for to ſow ſeed, by occaſion that we haue ſeen ſome to fall from trees, which being received by the ground, haue chitted, taken root, and liued. And in very truth, ſome trees there be that grow no otherwiſe, as Cheſtnut, and Walnut-trees, excepting onely thoſe that being cut downe, doe ſpring new again from the root. Of ſeed alſo (although the ſame be farre vnlike to others) thoſe alſo will grow; that are vſually planted otherwiſe; as for example, Vines, Apple trees, and Pyrries: for in theſe the ſtone and pepin within, ſeruеth in ſtead of the ſeed; and not the fruit it ſelfe, as in thoſe before rehearſed, the kernels whereof [*i.* the fruit] are ſowne. Medlars likewiſe may come vp of ſeed. But all the ſort of theſe that ſpring after this maner, be late ere they be come forward, and ſlow in growth: they turn alſo
B to a degenerat and baſtard nature, and had need to be graffed anew ere they be reſtored to their owne kind: which is the caſe of Cheſtnuts alſo otherwhiles. Howbeit there be others for them againe, which (ſow or ſet them what way you will) neuer grow out of their owne kind; and ſuch be Cypreſſes, Date trees, and Lawrels: for the Lawrell commeth vp by ſowing, by ſetting, and planting, after ſundry ſorts. The diuers kinds whereof, we haue deſcribed already. Of all which, the Lawrell Auguſta with the broad leaues, the common Bay tree alſo that beareth berries, as alſo the wild kind named Tinus, be ordered all three after one and the ſame ſort. The manner whereof is this: the Bayes or berries thereof, be gathered dry in the moneth of Ianuary when the Northeaſt wind bloweth: they are laid abroad thin to wither, one apart from another, & not in heaps, for feare they ſhould catch a heat. This done, ſome put them afterwards in dung; and
C being thus prepared and ready for to be ſowne, they ſteep them in wine. Others take and lay them within a large basket or twiggen panier, trample them vnder their feet in a brook of running water, vntill they be pilled and rid of their outward skins: for otherwiſe their skin is of ſo tough and moiſt a ſubſtance, that it would hardly or not at all ſuffer them to come vp & grow. After all this, in a plot of ground wel and throughly digged once or twice ouer, a trench or furrow muſt be made a handfull deepe, and therein the berries ought to be buried by heaps, to wit, twenty or thereabout together in one place: and all this would be done in the month of March. Lawrels alſo will grow, if their branches or boughes be bended from the ſtocke and laid within
D the ground: but the Triumphall Lawrell will come vp no other way but by ſetting a graffe or impe cut from it. As for the Myrtle, all the ſorts thereof within Campaine, come of berries ſown: but we at Rome vſe to interre only the boughes of the Tarentine Myrtle, growing ſtill to the body, and by that means come to haue Myrtle trees. *Democritus* ſheweth another deuiſe alſo to increaſe Myrtles, namely, to take the faireſt and biggeſt berries thereof, & lightly to bruiſe or bray them in a mortar, ſo that the grains or kernels within be not broken; & then to beſmere with the batter or ſtamped ſubſtance thereof, a courſe cord made of Spart or Spaniſh broome, or els hempen hurds, and ſo lay it along within the ground. Thus there wil ſpring therof, a marueilous thick hay or wall (as it were) of yong Myrtles: out of which, the ſmall twigs you may draw which way you will, yea, and plant them elſwhere. After the like manner, folke vſe to ſow thorns or brambles for to make hedges & mounds, namely, by annointing ſuch another hempen
E rope with bramble blacke-berries, and interring the ſame. As for Bayes thus ſowne, when they come once to beare a dark and blackiſh leafe: Myrtles alſo, when their leaues be of a wine color, to wit, of a deepred (which commonly happeneth when they be three yeres old) it wil be time to remoue and tranſplant.

Among thoſe plants and trees that are ſowne of ſeeds, *Mago* maketh much ado, and is foully troubled about thoſe trees that beare nuts, & ſuch like fruit in ſhels: for to begin with almonds firſt, he would haue them to be ſet in a ſoft clay ground that lieth into the South: & yet he ſaith againe that Almond trees loue a hot and hard ſoile; for in a fat or moiſt ground, they will either die or els wax vnfruitful. But aboue all, he giueth a rule to chuſe Almonds for to ſet or ſow, that be moſt hooked, and eſpecially ſuch as were gathered from a young tree: alſo he ordaineth, that they ſhould be well ſoked or infuſed in ſoft beaſt ſherne or thin dung, for three daies together:
F or at leaſtwiſe in honied water, a day before they be put into the ground. *Item*, they ought (by his ſaying) to be ſet charily with the ſharp and pointed end pitched downward, and the edge of the one ſide to turne into the Northeaſt. Alſo that they muſt ſtand three and three together in a triangle, forſooth, ſo as there be a handbredth iuſt between euery one. Moreouer, that euerie tenth day they ought to be watered, till they be ſhot vp to a good bigneſſe. Now to come vnto

walnuts,they be laid along within the earth, with this regard,that they do ly vpon their ioints. G
As for pine nuts,there would be six or seuen of their kernels put together into pots that haue holes in them,and so buried in the ground: or else they should be ordered after the manner of the Bay tree,which commeth of berries bruised,as hath been shewed before.

The Citron tree will grow of seed, and may be set also of sprigges or twiggs drawne to the ground from the tree,and so couched. Servis trees come of the grains thereof sowed of a quick-set plant also with the root, or of a slip plucked from it. But as the Citron trees liue in hot grounds,so these Servises loue cold and moist.

As concerning seminaries and nourse-gardens,Nature hath shewed vs the reason and maner thereof, by certaine trees that put forth at the root a thick spring of yong shoots or sions; but lightly the mother that beareth these imps, killeth them when she hath done, with her shade H
and dropping together. And this is euident to be seene in Lawrels, Pomegranate trees,Planes, Cherry trees,and Plum trees: for standing as these imps doe, a number of them without all order vnder their mother stocke,they be ouershadowed and kept downe so, that they mislike and neuer come to proofe. Howbeit some few there be of this sort, that are not so vnkinde to their yong breed,as to kill them with the shadow of their boughs, and namely Elmes & Date trees. This would be obserued by the way,that no trees haue such yong imps springing at their feet, but they only whose roots for loue of the warm sun and moist rain, spred aloft and ly eb within the ground. Moreouer,the manner is not to set these yong plants presently in the place where they must remaine and continue for altogether, but first they are to be bestowed in a piece of ground where they may take nourishment,to wit,in some nurse-garden for the nones,vntil they are grown to a good stature; and then they are to be remoued a second time to their due place. And a wonder it is to see,how this transplanting doth mitigate euen the sauage nature of the I
wildest trees that are: whether it be that trees as well as men are desirous of nouelties,and loue so be trauelling for change; or that as they go from a place,they leaue behind them their malicious qualitie,and being vsed to the land,become tame and gentle like the wild beasts; especially when such yong plants are plucked and taken vp with the quicke root. Wee haue learned of Nature also another kinde of planting like to this: for we see that not only water shoots springing out of the root, but other sprigs slipped from the stocke, liue and doe full well: but in the practise of this feat they ought to be pulled away with a colts foot of their owne, so as they take a quicke parcell also of their mothers bodie with them, in manner of a fringe or border hanging thereto. After this manner they vse to set Pomegranate, Filberd, Hazell, Apple, and Servise trees; Medlars also, Ashes,and Figge trees; but Vines especially: marie,a quince K
ordered and planted in that sort, will degenerate and grow to a bastard kinde. From hence came the inuention,to set into the ground yong sprigs or twigs,cut off from the tree. This was at first practised with foot-sets for a prick-hedge,namely,by pitching down into the earth, Elder,Quince-cuttings,& brambles;but afterwards men began to do the like by those trees that are more set by,and nourished for other purposes, as namely Poplars, Alders,and the Willow, which of all others may be pricked into the ground with any end of the cutting or sprig downward,it makes no matter whether,for the smaller end will take as wel as the bigger. Now al the sort of these are bestowed and ranged in order at the first hand,euen as a man would haue them and where he list to see them grow, neither need they any remouing or transplantation at all. But before we proceed any further, to other sorts of planting trees, it were good to declare the L
manner how to order seminaries, seed-plots,or nource-gardens.

For to make a good pepinnier or nource-garden, there would be chosen a principal and special peece of ground:for oftentimes it falleth out, yea and meet it is,that the nource which giueth sucke should be more tender ouer the infant, than the owne naturall mother that bare it. In the first place therefore, let it be sound and drie ground, howbeit furnished with a good and succulent elemental moisture, and the same broken vp and after wel digged ouer and ouer with mattock and spade, and brought to temper and order, so as it be nothing coy but ready to receiue al manner of plants that shall come,and to entertain them as welcome guests;& withall, as like as may be to that ground vnto which they must be remoued at last. But before al things this would be looked to, that it be rid clean of all stones;surely fenced also and paled about,for M
to keep out cockes and hens and all pullen: it must not be full of chinkes and cranies,for feare that the heat of the funne enter in and burne vp the small filaments or strings and beard of the new

A new roots: and last of all, these pepins or kernels ought to stand a foot and a halfe asunder: for in case they meet together and touch one another, besides other faults & inconueniences,they will be subiect to wormes: and therefore I say there would be some distance between,that the ground about them may be often harrowed and raked,to kill the vermin, and the weeds pluckt vp by the heeles that do breed them. Moreouer,it would not be forgotten to proin these yong plants when they are but new come vp: to cut away, I say, the superfluous sprigs vnderneath, and vse them betimes to the hooke. *Cato* giueth counsel to sticke forks about their beds a mans height,and lay hurdles ouer them,so as the Sun may be let in vnderneath: and those hurdles to couer and thatch ouer with straw or holme,for to keepe out the cold in winter. Thus are yong plants of Peare trees and Apple trees nourished: thus Pine nut trees,thus Cypresses which do
B likewise come vp of seed,are cherished.

As for the grains or seeds of the Cypres tree,they be exceeding small, and so small indeed, that some of them can scarce be discerned well by the eye. Wherein the admirable worke of Nature would be considered, to wit, that of so little seeds should grow so great and mightie trees,considering how far bigger are the cornes of Wheat and Barley (to make no reckoning nor speech of Beans) in comparison of them. What should we say to Peare trees and Apple trees? what proportion or likenesse is there betwixt them,and the pretty little pepins whereof they take their beginning? Maruell we not,that of so slender and small things at the first,they should grow so hard,as to checke and turne again the very edge of ax and hatchet? that frames and stocks of presses should be made thereof so strong and tough, as will not shrinke vnder the
C heauiest poise and weights that be? that Mast-poles comming thereof should be able to beare saile in wind and weather? and finally, that they should afford those huge and mightie Rams and such like engins of batterie,sufficient to command towers and bastils, yea,and beat downe strong walls of stone before them? Lo what the force of Nature is! see how powerfull shee is in her works! But it passeth and exceedeth all the rest,that the very gum and liquour distilling out of a tree,should bring forth new plants of the same kind,as we will more at large declare in time and place conuenient. To returne then againe to the female Cypres(for the male as hath bin said already bringeth forth no fruit) after that the little balls or pills (which be the fruit thereof) be gathered,they are laid in the Sun to dry,during those moneths, which we haue before shewed,and being thus dried,they will breake and cleaue in sunder. Now,when they are
D thus opened,they yeeld forth a seed which Pismires are very greedy of. Where another wonder of Nature offereth it selfe vnto vs, That so small a creature as it should eat and consume the seed which giueth life and being to so great and tall trees as the Cypres. Well,when the said seed is gotten,and the plot of ground laid euen and smooth,with cilinders or rollers,it must be sowne of a good thicknesse in the moneth of Aprill: and fresh mould sifted and strewed ouer with riddles an inch thicke and no more: for if this grain be buried ouer-deep and surcharged, it is not able to break through against the weight of the earth,but in stead of rising vp,the new chit turneth and bendeth backward vnder the ground. And hereupon it is that folke forbeare either to go at all vpon it, or else they tread very lightly. Being thus sowed, it must be gently watered for three daies following,after the Suns setting,(that the earth may drinke equally in
E all places) vntill the sprouts appeare aboue ground. Now,after they haue had a yeares growth, they be transplated and re-planted againe in rewes: for by that time they are come to a span or nine inches in height: but great care must be had that the time be temperat,that is to say, that the weather be fresh and faire without any wind. Certes a wonderfull thing it is to be spoken, that all the danger or security of this tree,standeth vpon the choice of that only day wherein it is replanted: for let there fall neuer so small a rain or dew,nay let the wind blow neuer so little, it is a great hasard whether it will die. For euer after it is warished and safe enough, howbeit it cannot abide a glut of rain at any time following. Moreouer, as touching Iujubes, they are likewise set of their graines in the moneth of Aprill. But that kinde of Peaches or Abricots which be called Tuberes, loue better to be graffed either vpon a skeg or wilde Plum-stocke, or
F Quince,or else vpon the wild Hart-Rhamme,called Calabricum, [or Spina Cervina.] To knit vp this discourse,the fruit Sebesten and the Serviles may be graffed and planted both vpon the same kind of stocke: and looke what will beare the one,is apt to receiue the other.

CHAP.

Chap. XI.

¶ The manner of translating or replanting out of one seminarie or nource-garden vnto another. How Elmes are to be planted. Also as touching trenches.

SOme would haue vs to remoue plants out of one seminarie into another, before they be set indeed where they should be for to continue: which me-thinkes is a matter of more toile and curiositie than necessitie, howsoeuer they make promise, that by such transplanting, the leaues will proue larger and broader.

*i. The first of March.

Now for Elms, their seed or grain is to be gathered about the * Calends of March, when it beginneth to turn yellow, and before the leaues break forth. After it hath bin dried in the shadow for two daies, it is to be sown thick in a plot of ground well broken vp and laid hollow beforehand, and then must there be mould searced ouer through a fine riddle, to the same thicknesse as we haue appointed for the Cypres. In case no raine do fall in due time, it ought to be watered by hand. After one yere, the plants that come herof must be taken vp out of the trenches and ranges wherein they came vp, and translated directly into the Elme plots where they are to grow; with this care & good regard, that they stand a foot at least euery way distant one from another. As for the male Elmes, vnto which Vines are wedded, because they are without seed, it is better they were planted in the Autumne: and for that they want seed they would be set of plants. Here with vs about Rome side they vse to replant them again in their groue-plots when they be fiue yeares old, or as some would haue it, so soon as they be come to 20 foot in height. The maner whereof is this, in a trench or ditch called * Novenarius, 3 foot deep in the ground, and as many broad, or rather more, they are set: which done, for three foot in height euery way about the foot of each tree from the ground as it stands, there must be banks raised of some earth, after the maner of those seats which they cal Arulæ in Campanie. As for the spaces between tree and tree, they ought to be set out and disposed according to the nature and scituation of the place, and as the ground wil giue leaue. In the champion and plain country, those would be planted that are of a drier nature, and likewise in a thinner course. As for Ashes and Poplars, because they make haste to spring, leafe, and bud out betimes, it is meet that their plants likewise were set and ranged with the first, that is to say, about the *Ides of Februarie; for they also grow of plants, and may well be replanted.

*Nine foot distant euery way from another, for trees were planted ordinarily with that space betweenas may appeare in the next chapter.

*i. The 13 day of Februarie.

Now for the order of setting trees either in groues, hort-yards, or vine-yards, wee ought to follow the vsuall maner of checquer row, called Quincuntial, which is not so common, but it is also as necessarie: not only good to admit all kindes of winde to passe betweene, but also faire and pleasant to the eye, considering, that which way soeuer a man looks, there offer to his sight both the allies, and rewes, directly ranged in order.

The Opiets or Wich-Hazels are sown of seed after the same maner as Elme: in like sort also are they to be remoued & transplanted out of their nource-plots, as if they were wild, drawn from the very forrests.

Moreouer, aboue all things this would be considered, that a tree to be remoued ought to be translated either into the like ground from whence it came, or else into a better. For we must take heed how we remoue plants out of warme grounds, & where the fruit is early ripe, into others that be colder or late in ripening. Semblably, out of cold & hard places, they would not be translated into warm, mellow, and forward. *Item*, if it be possible, let the trenches be cast and digged so long before, that a good thicke green sourd be ouergrowne against the time that you mean to plant. *Mago* is of opinion, That the said trenches should stand made a yeare before at the least, that they might be fully seasoned with the Sun, and receiue all rain, winde, & weather throughly. But in case it fall out otherwise, that the opportunitie thereof be ouerslipt, or our leisure wil not serue, he would haue fires to be made in the midst of them two moneths before, and in no case any trees to be set but after showres of rain. And if the ground be tough or hard, and standing vpon the cley, the ditches ought (according to *Mago*) for to be three cubits deepe euery way: and if they be to plant plum trees, he would haue them be a hand-bredth more, or spanne in deapth, and digged on euery side hollow, and vaulted in manner of a fournace, with a narrower mouth in the top. In a blacke veine of ground, by his direction, it is sufficient that they be two cubites and a hand-breadth or spanne deepe, and made foure-square in manner

ner of a quadrangle. In the measure and proportion of these ditches, the Greeke writers doe accord in one, saying, that they ought not to be more than two foot and a halfe deepe, nor wider than two foot bare: also, that in no place it must be vnder a foot and a halfe deepe, for that in a moist soile, we shal come ordinarily neer to water about that skantlin, and not before. But *Cato* is of another judgment, If (quoth he) the place be watrish, let the trenches be three foot broad in the mouth, but in the bottome not aboue a foot and a hand-breadth, but see they bee foure foot deep: prouided alwaies, that they be * paued beneath with stone: and for want thereof, laid with green willow bastons, and for default of them, with vine cuttings, or such trousse, so that they lie halfe a foot thicke. But considering the nature of trees herof we haue before written, I think it not amisse to adde somewhat of mine owne, namely, The more ebbe that any roots of trees creepe vnder the ground, the deeper they must be set into the earth, as for example, the Ash and the Oliue tree: for they and such other like ought to stand foure foot deepe. As for all the rest, it skils not, if they goe no deeper than 3 foot, for that is thought sufficient. [Stocke me vp this root here (quoth *Papyrius Cursor* a Roman in General, in a brauery, when he meant to terrifie the Pretor of the Prænestines.) Whereby it is plain, that the more secure & safe way in his judgment was rather to cut the stocke and maister Root indeed, than slightly to pare away those bare roots that appeare naked aboue ground; for that mought be done, and the tree neuer the worse for it.] Some there be that would haue round peble stones laid in the bottom of such ditches, which might as wel contain and keep water, as let it forth and giue issue thereto: whereas broad flat stones would not so doe, but besides, hinder the root that it should not goe downe and take hold of the earth. For to keep therefore a meane betweene, it were good in mine opinion, to lay grauell vnder the root.

* It seems that *Cato* meant of trenches to drain water out of low grounds: and not as *Pliny* mistaketh.

Moreouer, there be diuers men of this mind, that a tree should not be remoued, either vnder two yeares old, or aboue three; wheras others make no question to transplant them after the first yeare, without more adoe. *Cato* alloweth not of translating a tree, vnlesse it beare in thicknesse more than 5 fingers. And verily, so exactly hath he written hereof, that he would not haue forgotten, to marke in the barke of trees the South side, before they were taken vp, in case, hee had thought that it was material to the replanting of them, that they should stand just in the same position and accustomed coast of the heauen, as they did before; for feare least that side which regarded the North, if now it should be opposed against the South, might cleaue and rift with the heat of the Sunne, not vsed thereto: and contrariwise, the parts which looked Southward, might now by the Northern winds, be clunged and congealed withall. Now there be some that affect a cleane contrarie course, and namely, in the Fig tree, and the Vine; exchaunging the one side for the other: being fully persuaded, that by that means they will beare leaues thicker, preserue and defend their fruit better, and in the end shed fewer: more particularly, that the fig-tree therby wil be the * more easie to climb. Most men take great heed of this only, that when they prune trees, and cut off the top ends of boughes, the cut may be toward the South; without any regard or consideration, that in so doing they expose the boughs to the danger of cleauing, by reason of the hote Southern wind which lieth vncessantly beating vpon them. Yet hold I rather with them, that would haue branches cut Southeast or Southwest, namely, toward the points where the Sun is, at the fift and eight houres of the day. Another secret there is besides, wherof they are as ignorant, howbeit, not to be neglected, namely, to beware that the roots of such trees as are to be replanted, stay not long aboue ground, and thereby wax drie: also, that trees bee not digged vp, either standing into the North, or in any quarter between that point and the South-east, where the Sunne riseth in midwinter, in case the wind sit in those corners: or at least wise, that the roots be not exposed bare against any of those winds: for surely, many a tree dies hereby, and husbandmen neuer know the cause thereof. *Cato* vtterly condemneth al maner of winds whatsoeuer, yea, and raine too, all the while that trees be in remouing. Moreouer, in this case it is singular good, that there hang to the roots of these trees, when they be translated, as much of the old earth wherein they liued and grew before, as may bee, yea, and (if it were possible) to bring them away with the turfes whole and entire, lapped fast about the roots. And therefore *Cato* prouided wel, that such yong plants should be caried in baskets, earth and altogether with the roots. Doubtlesse, not without very great reason there is one Author saith, That it is sufficient that the vppermost course of the old mouth that lay at the foot of the tree, should be put vnder the root thereof now when it is replanted. Some write, that if the bottom of the hole or

* *Scaliger* reading it ἀβαπτον, happely for ἀβαπτον, out of *Theophrastus*, (i.) more fertill and fruitfull.

graue

graue be paued with ſtone where Pomegranate trees ſhould ſtand, the Apple or fruit that they bear, wil neuer burſt nor cleaue vpon the trees. Alſo, that the roots of trees when they are to be ſet, ſhould be laid bending atone ſide, and not ſtand direct and ſtreight. Moreouer, that the tree in any caſe be ſet juſt in the mids of the ditch or hole made for it. It is ſaid moreouer, that if a man plant a fig-tree, together with the ſea-onion, Scilla (that is a kind of the Bulbi) it wil make haſt to bear Figs, and thoſe wil not be ſubject to the worme: and yet other fruits will be worm-eaten neuertheleſſe, ſet them with the ſaid Scilla as well as you can. As for the roots of a tree who makes any doubt, that great care ſhould be had in the taking of them vp? ſo as they might ſeeme rather drawn forth gently, and not plucked vp violently. But my purpoſe is not to dwell in theſe matters, nor to ſtand much vpon ſuch points, which haue a manifeſt reaſon, and wherof no man is ignorant or doubtfull; to wit, that the earth is to be well driuen and beaten downe cloſe with a rammer, that it may lie faſt about the roots, which *Cato* judgeth to bee a principall poinc for to be obſerued in this buſineſſe: who alſo giueth a rule, that the place where a tree is ſet in the body, ſhould be plaſtred ouer with dung, couered ouer alſo, and faſt tied with leaues.

Chap. XII.

¶ Of the ſpaces and diſtances that ought to bee betweene trees planted: of their ſhaddowes and droppings: of the place where they ſhould be planted.

IT belongeth to this place properly for to ſpeak of the diſtances between tree and tree, in the ſetting. Some writers are of opinion, That Pomgranat trees, Myrtle trees, & Lawrels, ſhould be planted thicker than ordinarie, howbeit, with this regard, that they be ſet 9 foot aſunder one from another. As for Apple trees, they may ſtand a little more at large, Peare trees ſomewhat wider than they, Almond trees, and Fig trees yet a little more than all the reſt. But herein muſt we be ruled & directed by the boughs ſpreading more or leſſe, by the room of the place it ſelfe, and according to the ſhadow that each tree caſteth. There is not (I ſay) any one of theſe conſiderations to be neglected, and the ſhade eſpecially of all others would be obſerued. For ſuch trees as branch round as it were in compaſſe, although they be otherwiſe great, as namely Apple trees, and Pyrries, yet they yeeld no great ſhadow: whereas a man ſhall ſee Cherry trees and Lawrels take vp an exceeding deale of ground with their ſhade. Now theſe ſhaddowes of trees haue their properties by themſelues, for that of the Walnut tree is noiſome and hurtfull euen to man, breeding heauineſſe in the head: and an ill neighbour it is beſides to all plants either vnder or neere vnto it. The Pine tree alſo with her ſhaddow nippeth and killeth the yong ſpring of all plants within the reach thereof. Howbeit, both it and alſo the Walnut tree reſiſt the force of winds notably, and therefore they ſerue in good ſteed to protect vineyards, and are projected againſt the winds to breake their violence. The dropping of the Pine, Oke, and Maſt-holme, by reaſon of the raine water wherewith they are much charged, is very heauy and ponderous, and therefore hurtfull. As for the Cypreſſe tree, it droppeth little or nothing, by reaſon that it receiueth ſo ſmall a deale of rain: and in truth of all others the ſhade is leaſt, the boughs are knit and truſt ſo round, and run vp ſharpe pointed in the top. The Fig tree giueth no thicke ſhadow, howeuer the boughs ſpread large ynough; which is the cauſe, that no man forbiddeth the planting of them in Vineyards among Vines. And as for Elmes, their ſhade is ſo milde and thin, that it nouriſheth whatſoeuer it ouerſpreads vnder it. Howbeit, *Atticus* is of opinion, That the ſhaddow of Elmes is one of the thickeſt and moſt hurtfull: neither doe I make any doubt thereof, if they be let to ſpread into great armes and boughes at liberty: marie, if the branches thereof, or if any tree within-forth be ſhrigged, I thinke that the ſhade will doe no harme at all. The Plane tree carieth a heauie head, and therefore caſteth a thicke ſhade, howbeit, pleaſant it is, and refreſhes thoſe that ſit vnder it: ſaue reſting there is vpon the graſſe, rather than the bare ground: and there is not a tree againe where graſſe groweth thicker and longer, to couer the bankes and ſeats vnder it. As for the white Poplar or Aſpen tree, if maketh little or no ſhade at all, the leaues keep ſuch a wagging & trembling, and neuer hang ſtill: the ſhadow of the Alder tree is fat and bartle, it feeds whatſoeuer is ſowne or ſet vnder it. The Vine hath ſhade ynough to ſerue her owne turne: the leaues are euer ſtirring, and by their motion and turning often too and fro, there is a good temperature of ſhade and Sunne by that meanes: they ſerue alſo in ſteed of a couert in time of raine, and beare off a good ſhower. Generally, all trees in manner that haue

haue their leaues hanging by a long taile, caſt but a light and ſlender ſhaddow. And truly the knowledge hereof would not be contemned, nor ſet in the laſt place of ſuch points as belong to husbandrie, conſidering there is not the ſhadow of any one tree, but either is a kind nource, or a ſhrewd and curſt ſtep-dame, that is to ſay, either profitable or incommodious to all the fruits of the earth. For without all queſtion, the ſhade of Walnut trees, Pine trees, Pitch trees, & firs is no better than poiſon to all that is within the compaſſe of it, and kils whatſoeuer it toucheth. And thus much of Shadowes.

As touching the dropping of trees, a man may conclude in one word all that belongs thereunto. For looke what trees ſoeuer be ſo defended and clad with thick leaued branches, that the raine canot paſſe readily through them, be ſure the dropping and diſtillation of ſuch is naught and dangerous. And therefore it skilleth very much in this matter and queſtion now in hand, to know the nature of the earth wherin we meane to plant, how many trees it may well bear and nourith. As for hills, they require of themſelues not ſo great diſtance betweene tree and tree, as the plaines beneath: beſides, in ſuch places expoſed to the wind, it is good that they be planted thicker. Howbeit, Oliues require the greateſt ſpace between of all others: and therfore *Cato* following the judgment of all Italie, ordaines in theſe words, That they ſhould ſtand aſunder fiue and twentie foot at the leaſt, and thirtie at the moſt: but this rule holdeth not alwaies; for herin guided we muſt bee by the nature and ſite of places, which varie and differ much. For in Bœtica, which is a part of Spaine, there is not another tree growing, bigger than the Oliue: and if we may giue credite to authors that haue written hereof, there bee in Affricke, by their report many of them called Milliariæ, for that euery yeare they yeeld a thouſand pound weight of oile, apeece. And therfore *Mago* allowed threeſcore and fifteen foot euery way, for diſtance between Oliue trees, or elſe fiue and forty at leaſt, euen in leane and hard grounds, and thoſe that were expoſed to the winds. And in Bœtica verily, the people vſe to reap great plenty of corn among Oliue trees.

Now of all other follies this is one, and bewraieth ſhamefull blindneſſe and ignorance, To be driuen to make glades between trees when they be grown to a good bignes: and namely, either by lopping their boughs too much for to let in light between, and ſo by this means to haſten their age and decay; or els to draw them by cutting them downe cleane: wherin oftentimes they that did ſet them at firſt, take themſelues in the manner, and blame their own want of skil. Conſidering therefore, that there is no greater ſhame can happen to husbandmen than to repent when a thing is done, and then goe about to vndoe it, much better it is of the twain in this caſe, to fault in ouetwide, than too ſtreight roume.

Chap. XIII.

¶ What trees grow but ſlowly: and which they bee that ſoone come forward: alſo, of the Sauine.

SOme trees by nature are ſlacke of growth, and principally thoſe that come of ſeed, and liue longeſt. But ſuch as ſoone decay and die, are quicke of growth, as the Fig tree, Pomegranat tree, Plumme-tree, Apple-tree, Peare-tree, Myrtle, and Willow: but they make amends for their ſhort life in this, that they goe before others in fruit, and enrich their maſters quickly, for they begin to beare well at three yeeres age, yea, and they make a ſhew thereof in their bloſſom before. Of all theſe the Pear-tree is the ſloweſt. But the Cypirus, as wel the true & legitimat as the baſtard (which is a ſhrub called Pſeudo-Cypirus) come faſteſt forward of any other, for they beare at firſt both bloſſome and fruit. This is a generall thing obſerued, That al trees will thriue and proſper better, yea, and grow ſooner to perfection, if the ſhoots and ſuckers that put out at the root, as alſo other water twigs, be rid away, ſo that al the nouriſhment may be turned to the principall ſtocke only.

The work of Nature in ſending out theſe ſprigs, taught vs the feat to couch and lay ſets in the ground by way of propagation: and euen after the ſame manner briers and brambles doe of themſelues put forth a new off-ſpring: for growing as they do, ſmal and ſlender, and withal running vp to be very tall, they cannot chuſe but bend and lean to the ground, where they lay their heads againe, and take freſh root of their owne accord without mans hands: and no doubt ouergrow they would and couer the whole face of the earth, were they not repreſſed and withſtood

by

by good husbandrie. The consideration whereof maketh me to enter into this conceit. That men were made by Nature for no other end but to tend and look vnto the earth. See yet what a commodious deuice we haue learned by so wicked and detestable a thing as this bramble is, namely, to lay slips in the ground, and quick-sets with the root. Of the same nature is the Yuie also, euen to grow and get new root as it creepeth and climbeth. And by *Catoes* saying, not onely the Vine, but Fig trees & Oliues also, wil grow & increase of cuttings couched in the ground; likewise Pomegranate trees, all kinds of Apple-trees, Baies, Plum-trees, Myrtles, Filberds, Hazels of Præneste, yea, & Plane-trees. Now be there two waies to increase trees by way of propagation or enterring their twigs. The first is, to force a branch of a tree as it grows, downe to the ground, & so to couch it within a trench foure foot square euery way; & after two yeares to cut it atow, where it bent from the tree: and after three yeares end to transplant it. But if a man list to haue such plants or young trees to beare longer, the best way were to burie the said branches at the first within mould, either in paniers or earthen vessels, that when they are once rooted, they might be remoued all whole and entire in them, and so replanted. The second is a more curious and wanton deuise than this, namely, to procure roots to grow on the very tree, by carrying, and conueighing branches, either through earthen pots or oilier baskets, full of earth, thrust close to the said branches: and by this means, the branches feeling comfort of the warme earth enclosing them on euery side, are easily intreated to take root, euen among Apples and other fruits, in the head of the tree, (for surely by this meanes we desire to haue roots to chuse, growing vpon the very top.) So audacious are men and of such monstrous spirits, to make one tree grow vpon another, far from the ground beneath. Thus in like manner as before, at 2 yeares end, the said impes or branches that haue taken root, be cut off and carried away in the foresaid pots or paniers: thither where they shall grow. As for the Sauine, an hearb or plant it is that wil take if it bee in this sort couched in the ground: also, a sprig if it be slipped off cleane from the stocke, will come again and root. Folke say, that if a man take wine lees, or an old bricke out of the wal broken small, and either pour the one, or lay the other about the root, it wil prosper and come forward wonderfully. In like manner may Rosemarie be set as the Sauine, either by couching it, or slipping off a branch from it; for neither of them both hath any seed. To conclude, the hearb or shrub Oleander, may be set of any impe, and so grow, or else come of seed.

H

I

Chap. XIIII.

¶ *Of encreasing trees by seed: the manner of graffing one in another: how the fine deuise of inoculation by way of scutcheon and emplaister was deuised.* K

NAture not willing to conceal any thing from man, hath also taught him to engraffe trees with their seed and graine. For oftentimes it happeneth, that birds being hungrie, haue greedily gobled vp seed and fruit whole and sound, which after they haue moistened in their gorge, and tempered it also with the warmth and natural heat of their stomack, they send forth and squirt out again when they meute, together with their dung, that giueth vnto it a vertue of fecunditie, and so lay it vpon the soft beds of tree leaues, which many a time the winds catch and driue into some clifts and cranies of the barke, by meanes whereof, wee haue seene a Cherrie tree vpon a Willow, a Plane tree vpon a Lawrell, a Lawrell vpon a Cherrie tree: and at one time Berries and fruits of diuerse sorts and sundry colors hanging at one and the same tree. It is said moreouer, that the Chough or Daw hath giuen occasion herof, by laying vp for store, seeds and other fruit in creuises and holes of trees, which afterwards sprouted and grew. From hence came the manner of inoculation or graffing in the scutcheon, namely, to cut out a parcel of the barke of that tree which is to be graffed, with a sharp knife made in manner of a shomakers nall blade; and then to enclose within the said concauity, the eie or seed taken out of another tree with the said instrument. And in old time verily this was the only maner, of inoculation vsed in fig-trees and apple trees. *Virgil* teaches vs to open a concauity in the knot or joint of a bud that driueth out the barke, and within it to enclose the gem or bud taken out of another tree. And thus much for the graffing that Nature hath shewed. L

But there is another way of graffing, which casualtie and chance hath taught. And to say a truth, this Maister hath shewed well neer more experiments, now daily practised, than Nature her selfe. Now the manner of it came by this occasion. A certain diligent & painfull husband- M

A man, minding to mound and empale his cottage round about with a fence of an hedge; to the end that the stakes should not rot, laid a fill vnder them, of Iuie wood: but such was the vitall force of the said Iuie, that it took hold fast of the stakes and clasped them hard, insomuch as by the life therof, they also came to liue; and euident it was to the eye, that the log of Iuie vnderneath, was as good as the earth to giue life and nourishment vnto the stakes afore-said.

To come then vnto our graffing, which we haue learned by this occasion: first, the head or vpper part of the stock must be sawed off very euen, and then pared smooth with a sharp garden-hook or cutting-knife: which don, there offers vnto vs a two-fold way to perform the rest of the worke: The first is, to set the graffe or Sion between the barke and the wood: for in old time truly, men were afraid at first to cleaue the stocke; but soon after they ventured to bore a hole into

B the very heart of the wood: and then they set fast into the pith just in the mids thereof, but one Sion or graffe, for by this kind of graffing, impossible it was that the said pith should receiue or beare any more. But afterwards they deuised a finer and more subtile inuention to graffe, by cleauing the stocke gently thorough the mids; and after this manner they might well set into it six imps or Sions at once: as being perswaded, that by such a number they might supply the defect of any, if they chanced to die or miscarry any way. Now when the said clift was made, they held it open with a wedge of wood put between, vntill such time as the impe or graffe being thwitted thin and sharp beneath were set hand somely close within the rift. In the practise of which feat, many points are to be obserued: first and foremost, it would be considered, what trees will thus sort together and be vnited; namely, what stock will beare this maner of engraf-

C fing, and of what tree an impe or Sion will agree well to be set into it: for be ye sure of this, all trees are not alike, neither haue they all their sap in one and the same part. Vines and Figtrees are drier in the mids of the tree, than in the head; and toward the top they are more apt to take and conceiue, and therfore from thence it is good to make choise of impes to be graffed. Contrariwise, the sap of Oliues is most frim about the mids, and from thence they afford Sions, for the tops are drie. Moreouer, sooneft of all other doe those trees incorporate one into another, if when the stock and graffe haue barks both of one nature, if they blossom together at one time, if they bud and put forth their spring at the same season, and last of all, if their saps doe agree one with another. On the other side, long it wil be ere they take, when the stock is drie and the graffe moist; or when the barke of the one is tender, and of the other tough and hard. Ouer and

D besides, carefull heed must be taken in this businesse, That the stocke be not clouen in a knot; for the churlish hardnesse therof will not willingly receiue and entertaine a guest, that choise also be made of the smoothest and faireft place in the stocke, where the graffe would be set: *Item*, That the clift be not aboue 3 fingers deepe; that it be streight and direct; and lastly, that the impe stand so close barke to barke in the socket, that a man may not see between it and the stocke. *Virgil* will in no wise haue a Sion or graffe to be taken from about the top of a tree, for such are all naught. But this one thing is generally held for certain, That the good imps to bee graffed are those, which be gathered from those armes of the tree that regard the Sun-rising in summer: *Item*, That all such graffs come from the boughs that beare well: also that they be new tender shoots of the last yeare (vnlesse they are to be graffed in the stock of an old tree, for then

E there should bee chosen such as are stronger:) moreouer, this is to be regarded, that they be well budded, yea and knotted too, making shew and giuing good hope euen then, that they would bear fruit the same yere, but in any wise the same ought to be of 2 yeres growth at least, and not smaller beneath toward the stocke than a mans middle finger. As for the graffes, the

F manner is to set them in the stocke with the lesser end downward, when our purpose is, that the tree should spread rather in breadth, than run vp in hight. Aboue all, it would be looked wel to, that they be neat and bright, so as they shine againe; that no part of them be seene either scorched drie with the sunne, or cicatrized (as it were) and blistered. Good hope there is that the graft will take, if the pith or marrow of the sion do fall jump with the joynt, so as it joyne close to the wood and inner barke of the mother stocke: for this is farre better than to let it meet just and euen with the bark without-forth. Moreouer, a carefull eie must be had in thwitting and sharpning the graffe or imp, that the heart or woody substance be not stript all naked and left bare: howbeit gently and with a light hand a man must go ouer it with a fine and sharp instrument, in such sort, as it may go downe into the clift wedgewise, no deeper than 3 fingers bredth: the which may right easily be don, if it be shauen and pared presently after it hath bin dipped

in water. Moreouer, wee ought be well aduised, that wee sharpen not the end of a graffe in the G
wind, and that the barke goe not either from it or the stock. As for the graffe it selfe, it must be
driuen downe into the clift, close to the shoulder where the owne barke goeth round, and from
whence you began to sharpen it: but take heed in thrusting and forcing therof, that it stand not
out of joynt, ne yet that the barke thereof turne vp in wrinkles: and therfore chosen they would
not be which are ouer moist, no more (I assure you) than those that be too drie; for as the ex-
cessiue humiditie of the one looseneth the rind, so the want of vitall moisture in the other, will
not suffer it to vnite & concorporat. Ouer and besides, in the working of this feat, men obserue
a certain religious reuerence, namely, that the sions be set into the stocke when the moone is
croissant (to wit, before the full) and with both hands forsooth, or els all is marred: and other-
wise in this businesse there is an opinion, that two hands together are put to smaller streesse, and H
haue better stay of themselues than one alone; and therefore such a moderation is right neces-
sarie: for the more forcibly the graffes be set into the stocke, and the faster that they are setled,
the longer it will be ere they take to bear; but surer they be, and continue the longer: contrari-
wise, if they stand slacke, the tree indeed will the sooner beare, but last the lesse while. Further-
more, regard would be had in this case, as well that the clift of the stocke gape not too much
(as being ouerwide for the graffe;) as that it be not too little and ouer-streight, for feare that ei-
ther it flurt it out againe, or clasp it and gird it so hard that it kill it quite. This principally we
must take heede of at the first, that there be no spill or little chip left behind in the mids of the
clift, nor any thing besides the graffe it selfe, to fill vp the place. Some there be, that enter the
clift first in the stock, with a bill, and with an osier twig tie and bind vp the very brims or edges I
therof: which done, they driue the wedges in, to make such an ouerture as is meet; for by reason
of the foresaid bonds, they need not feare the gaping of it too wide. Some stocks there be that
the very same day that they be graffed in the nource-garden, are without any harme remooued
to the place where they must grow. If the stocke wherein you graffe be big and round, the best
way is to set the sion between the barke and the wood therof, and to diuide the one from the o-
ther with a wedge of bone, least in enlarging of the barke it chance to breake. In graffing of a
Cherry tree stocke, the ouer rind or barke would be taken away before the clift be made. [Now
these trees alone of all others may be graffed very well presently after mid-winter.] When the
said rind is gone, you shall see therein a certain down, that if it chance to clasp about the graft,
it rots the same incontinently. But to return again to our worke of graffing: After the wedge is
taken forth whole and sound at the point (which is a token that no spill remaines within) you K
may be bold to bind the head of the stocke all about. Yet this would be considered by the way
(which I had like to haue forgotten) that the best & handsomest graffing, is as neer the ground
as may be, in case the knots wil giue leaue and the stock beare it: also that the grafts would not
conueniently stand without the stock aboue six fingers breadth. Now when al is done and sure
work made (as hath been said) *Cato* willeth vs to take cley, or the sandie grit of chalk, mixed to-
gether with oxe or cow shearn, to worke and temper all these together in maner of a tough past
or cataplasme, and then to lay the same within the clift, & round about to daube all. And verily
by this and other such rules which he hath left in writing, it appears plainly, that in those daies
the manner was to graffe betweene the barke and the tree, and not otherwise; as also to set the
sions in the stocke, not aboue two fingers deepe. As for Apple trees and Pyrries, he prescribeth L
that they should be graffed in the Spring; also 50 daies after the summer Sun-stead, and again
after vintage: but Oliues and Fig-trees in the Spring only, obseruing the age and disposition of
the Moon, when she is in the wane and thirstie, that is to say, drie: moreouer, after noonetide,
and when no Southern wind doth blow. And I cannot chuse but wonder much at the curiositie
and double diligence of *Cato*, who not content to haue defended the graft with clay or past a-
foresaid, yea and to preserue it with turfe and mosse against the injurie of rain and cold, to haue
bound it about also with little knitches of soft osier twigs sliued in twaine; must giue charge
besides to couer it with Oxe-tongue (a kind of herb there is so called) *i*. Buglosse: and yet hee
hath not done, but the same must be bound with wispes and wreaths of straw and litter aloft.
Now adaies men make no more adoe, but thinke it sufficient to stop and close vp barke and al, M
with earth or cley and chaffe tempered together, thinking it sufficient, the graft beare out two
fingers breadth aboue. They that wait vpon the Spring season for to graffe, are many times dri-
uen to their shifts for want of time, by reason that all trees make hast then to bud, and do break
out

A out of a sudden, vnlesse it be the Oliue, the oilets or eies where of be longest while in comming
forth, as hauing least sap of all other, running vnder the barke; the which if it were ouermuch
would stifle and choke the grafts. As for the Pomegranat and Fig tree, howsoeuer otherwise
they seem to be dry, yet good it is not to defer and put off the grafting of them. The Peare tree
may well enough be graffed with the blossom on the head, and it makes no matter if a man do
stay and graffe it within the moneth of May. To be short, if a man be constrained to fetch his
sions or imps of Apple trees, and such like, far off, it is thought that they will keepe their sap
best, if they be stuck or set fast in a Rape root. Also if one would preserue them a certain time
before they should be occupied, it is passing good to lay them close betweene two crest tiles,
well stopped on euery side with earth, and that neere to some riuers or fish-ponds.

B CHAP. XV. ¶ *The manner how to graffe a Vine tree.*

AS for the cuttings or sets of vines, they may be kept wel a long time, couered all ouer with
straw or litter in dry ditches; and afterwards they are to be laid within the earth, all hil-
led or couered, saue only that their heads be seen aboue ground. *Cato* graffeth a vine stock
three maner of waies: First, he willeth that the mother stock should be cut ouerthwart, & then
clouen through the very pith or heart in the mids, wherin he would haue the yong imps (thwit-
ted and sharpened as is beforesaid) to be set and ingraffed so, as the marrow of the one and the
other may ioyne and meet iust together. The second maner is, when two vine stockes doe reach
one to the other, for to cut by as or asiaunt (after the manner of a goats foot) two twigs or bran-
ches, of either one, with this regard, that these cuts be of a contrarie side the one vnto the other,
C and withall so deep, as that they come vnto the pith or heart: then to fit one to the other, ioy-
ning pith to pith, and then binding them fast together so close, that no aire may enter between,
vntill such time as the one hath adopted the other. The third deuise is, to bore holes in an old
vine, not directly, but aslope, as far as to the pith; and then to put into them yong imps 2 foot
long, and to bind them fast: which done, to make a certaine batter or morter [with clay, beasts
dung, and sand together] and therewith to dawbe the place: but with this regard, that the graft
stand halfe vpright, or somwhat leaning. This manner of graffing hath bin checked and corre-
cted of late daies by our countrymen, who leauing the hand-piercer, haue taken the French Vi-
brequin or brest-wimble, which gently and quickely boreth a hole, and hurteth not the wood:
for all chafing heate caused by the said piercer, dulleth the vigor both of stock and imp. Also
D they haue deuised, that the said imp to be ingraffed, be gathered from the tree when it begins
to bud or burgen: and when it is set into the stocke, that it be left standing out with no more
than two eies or buds out of the graffing place; that it be well bound also with the winding
rods of an Elme: moreouer, that on either side of it the mother stock be slit or cut in two pla-
ces on both sides, to the end that from thence rather than otherwise, the waterish humour may
distill and drop forth, which of all things hurteth vines most. After all this, they would haue
the said graffe remain bound, vntill such time as it haue put forth shoots two foot long; and
then the foresaid bands to be cut in sunder, that they may burnish in thicknes and at ease accor-
dingly. The season which they haue allowed for to graffe vines, is from the Equinoctial in Au-
tumne, vnto the time that they begin to bud forth. Generally all trees that are tame and gentle
E may wel be graffed into stocks and roots of the wild, which by nature are dryer: contrariwise,
graffe the wild and sauage kind vpon the other, you shal haue all degenerate and become wild.
Touching other points belonging to the feat of graffing, all dependeth vpon the goodnesse or
malignitie of the sky and weather. In sum, a dry season is good for all trees graffed in this ma-
ner: and say that the drought were excessiue, there is a good remedie for it, namely, to take cer-
tain earthen pots of ashes, and to let water distill through them softly, by little and little to the
foot of the stock. As for inoculation, it loueth small dewes otherwhiles, to refresh both stock,
scutcheon, and Oilet.

CHAP. XVI.

F ¶ *Of Emplaistration or graffing with the Scutcheon.*

THe manner of graffing by way of emplaistre or scutcheon, may seeme also to haue come
from inoculation: and this deuise agreeth best with those trees that haue thick barks, as
namely Fig trees. To goe therefore artificially to worke, the mother stocke or tree to be

graffed, must be well rid and clenſed from the branches all about the place where you mean to G
practiſe this feat, becauſe they ſhould not ſuck the ſap from thence; and chuſe the neateſt and
frimmeſt part, which ſeems moſt freſh and liuely: then cut forth a ſcutcheon of the barke [but
be careful that your inſtrument pierce no farther than the bark, nor enter into the quick wood]
which done, take from another tree the like ſcutcheon of the bark, ſauing the eye or bud there-
on, and ſet it in the place of the other; but ſo equall this muſt be to the place, and ſo cloſe ioy-
ned and vnited to it, that a man may ſee no token at all or apparance in the ioynt, of any wound
or skar made, to the end, that preſently they may concorporat, that no humor of the ſap may iſ-
ſue forth, nor ſo much as any wind get between: and yet to make ſure work, the better way is to
lute it well and cloſe with clay, and then to bind it faſt. This deuice of graffing thus with the
ſcutcheon was but lately found out, by their ſaying, that fauor all new and modern inuentions:
howbeit I find that the antient Greeks haue written thereof: yea and *Cato* alſo our own Coun- H
tryman, who ordained to graffe both Oliue and Fig tree in that order: and (as he was a man ve-
rie diligent and curious in all things that he tooke in hand) he hath ſet downe the iuſt meaſure
and proportion of the ſcutcheon; for he would haue the barks both the one and the other, to be
cut out with a chiſell foure fingers long, and three in bredth; and ſo to cloſe vp all in manner a-
foreſaid, that they might grow together; and then to be dawbed ouer with that mortar of his
making aforeſaid: after which maner Apple trees alſo may be graffed.

Some there be who haue intermingled and comprehended vnder this kinde of graffing with
the ſcutcheon, that deuiſe of making in the ſide a cleft, and namely in vines; for they take forth
a little ſquare piece with the bark, and then ſet in an impe very hard & cloſe, on that ſide where
it is plain and euen, to the very marow or pith. Certes, neere to Thuliæ in the Tyburtines coun- I
try, I haue ſeen a tree graffed all theſe waies aboueſaid, and the ſame laden with all manner of
fruits; one bough bearing Nuts, another berries, here hung Grapes, there Figs; in one part you
ſhould ſee Peares, in another Pomegranats; and to conclude, no kind of Apple or other fruit,
but there it was to be found: mary this tree liued not long. Howbeit, let vs vſe what diligence
we can, yet neuer ſhal we able with all our experiments to attain vnto the depth of Natures ſe-
crets. For ſome Trees there be that come vp of themſelues, and by no art and induſtry of man
wil be made to grow: ſuch alſo loue ordinarily to be in wild foreſts and in rough deſarts; where
they proſper well; wheras the Plane tree wil beare all manner of graffing beſt of any other; and
next vnto it the wild and hard Oke: but both the one and the other corrupt and mar the taſt of
what fruit ſoeuer is graffed thereupon. Some trees there be that refuſe not to be ingraffed vpon K
any ſtock, and what way ſoeuer they be graffed it skils not, as fig trees and Pomgranat trees. As
for the Vine it will not beare the ſcutcheon, neither any Tree beſides that hath a thin barke, or
which doth pill and rift: no nor ſuch as be dry or haue ſmall ſtore of ſap within them can away
with inoculation. Howbeit this maner of graffing is moſt fruitfull of all other; and next vnto it
that which is done by way of ſcutcheon or emplaſtre: yet trees ſo graffed be of all others moſt
tender and feeble: as alſo ſuch as reſt and ſtay vpon the bark only, are with the leaſt wind that
is, ſooneſt diſplanted and laid along on the ground. The ſureſt and ſtrongeſt way therefore is, to
graffe imps vpon the head of a ſtocke, yea, and more plentifull by far, than to ſow them of ſeed,
or plant them otherwiſe. L

Chap. XVII.

¶ *An hiſtorie ſhewing the example and proofe hereof.*

IN this diſcourſe and queſtion concerning grafts, I cannot paſſe ouer the rare obſeruation of
one example, practiſed by *Corellius* a Knight of Rome, borne at Ateſte: This Gentleman of
Rome, in a ferme that he had within the territorie of Naples, chanced to graffe a Cheſtnut
with an imp cut from the ſame tree: This graft tooke and bare faire Cheſtnuts and pleaſant to
the taſt, which of him took their name. After the deceaſe of this gentleman, his heire (who had
bin ſomtime his bondſlaue, and by him infranchiſed) grafted the foreſaid Corellian Cheſtnut
tree a ſecond time: and certainly between them both was this difference, The former Corelli- M
an bare the more plenty, but the nuts of the other twice graffed were the better. As for other
ſorts of graffing or planting, mans wit hath deuiſed, by obſeruing that which hath fallen out by
chance: thus are we taught to ſet broken boughs into the ground, when we ſaw how ſtakes pit-
ched

A ched into the earth, tooke root. Many trees are planted after that maner, and eſpecially the Fig
tree, which will grow any way, ſaue only of a little cutting: but beſt of all, if a man take a good
big branch thereof, ſharpen it at the end in manner of a ſtake, and ſo thruſt it deepe into the
ground, leauing a ſmall head aboue the ground, and the ſame couered ouer with ſand. The
Pomegranate likewiſe and the Myrtles are ſet of branches, but the hole firſt ought to be made
eaſie and large with a ſtrong ſtake or crow of iron. In ſum, all theſe boughs ought to be 3 foot
long, ſmaller in compaſſe than a mans arme, ſharpned at the one end, and with the barke ſaued
whole and ſound with great care. As for the Myrtle tree, it wil come alſo of a cutting; the Mul-
berry will not otherwiſe grow: for to couch and plant them with their branches, we are forbid-
den, for feare of the lightnings. And foraſmuch as we are fallen into the mention of ſuch cut-
B tings, I muſt now ſhew the manner of planting them alſo: aboue all things therefore regard
would be had, that they be taken from ſuch trees as be fruitfull, that they be not crooked, rough
and rugged, nor yet forked; ne yet ſlenderer than ſuch as would fil a mans hand, or ſhorter than
a foot in length. *Item*, That the barke be not broken or raſed; that the nether end of the cut be
ſet into the ground, and namely, that part alwaies which grew next the root; and laſt of al, that
they be banked wel with earth about the place where they ſpring and bud forth, vntil ſuch time
as the plant haue gotten ſtrength.

Chap. XVIII.

C ¶ *The manner of planting, ordering, and dreſſing Olive trees. Alſo which be the conuenient times for graffing.*

WHat rules (by the iudgment of *Cato*) are to be obſerued in the dreſſing and husbanding
of Oliues, I think it beſt to ſet down here word for word, as he hath deliuered them.
Thus he ſaith therefore: The trunches or ſets of Oliue trees which thou meaneſt to
lay in trenches, make them 3 foot long; handle them gently and with great care, that in cut-
ting, ſharpning, or ſquaring them, the bark take no harm nor pill from the wood. As for ſuch as
thou doſt purpoſe to plant in a nourſe-garden, for to remoue again, ſee they be a foot in length,
and in this manner ſet them: Let the place be firſt digged throughly with a ſpade vntill it be
well wrought, lie light, and brought into temper: when thou putteſt the ſaid truncheon into
D the ground, beare it downe with thy foot; if it goe not willingly deepe enough by that means,
driue it lower with a little beetle or mallet; but take heed withall, that thou riue not the barke
in ſo doing. A better way there is, To make a hole firſt with a ſtake or crow, before thou ſet it
into the ground, and therein maiſt thou put it at eaſe, and ſo will it liue alſo and take root the
ſooner: when they be three yeares old, haue then a carefull eye to them in any caſe, and marke
where and when the bark turneth. If thou plant either in ditches or furrowes, lay three plants
together in the earth, but ſo as their heads may ſtand a good way aſunder aboue the ground;
alſo that there be no more ſeen of them than the bredth of foure fingers: or els, if thou thinke
good, ſet the buds or eyes only of the Oliue. Moreouer, when thou art about to take vp an oliue
plant for to ſet again, be wary and carefull that thou break not the root: get as many ſpurres or
E ſtrings [called the beard] as thou canſt, earth and all about them: and when thou haſt ſufficient-
ly couered thoſe roots with mould in the replanting, be ſure thou tread it down cloſe with thy
foot, that nothing hurt the ſame.

Now if a man demand and would gladly know what is the fitteſt time for planting oliues,
in one word I will tell him, Let him chuſe a dry ground in ſeed time [*i.* in Autumne] and a fat
or battle ground in the ſpring: furthermore, begin to prune thy Oliue tree 15 daies before the
Æquinox in the ſpring, and from that time forward for the ſpace of forty daies, thou canſt not
do amiſſe. The maner of pruning or disbranching them, ſhall be thus, Looke where thou ſeeſt
a place fertile, if thou ſpy any dry or withered twigs, or broken boughs that the wind hath met
withall, be ſure thou cut them away euerie one: but if the plot of ground be barren, eare it vp
F better with the plough, take pains (I ſay) to till it well, to breake all clots and make it euen; to
clenſe the trees likewiſe of knurs and knots, and to diſcharge them of all ſuperfluous wood: alſo
about Autumne bate the earth from about the roots of Oliues, and lay them bare, but in ſtead
thereof put good mucke thereto. Howbeit if a man do very often labor the ground of an olive
plot, and take a deep ſtitch, he ſhall now and then plough vp the ſmalleſt roots thereof, ſo ebbe

they will run within the ground, which is not good for the trees; for in case they spread aloft, they will wax the thicker, and so by that means the strength and vertue of the Oliue will turne all into the roote.

As touching all the kinds of Olive trees, how may they be; also in what ground they ought to be set, and wherein they will like & liue best; likewise what coast of the heauen they should regard; we haue shewed sufficiently in our discourse and treatise of Oile. *Mago* hath giuen order in his books of husbandry, that in planting them vpon high grounds, in dry places, and in a vein of clay, the season should be between Autumne and mid-Winter: but in case you haue a fat, moist, or watersh soile, he sets down a longer time, namely from harueste to mid-winter. But this rule of his you must take to be respective to the clymat of Africk only: for in Italy at this day verily men vse to plant most in the Spring: howbeit if a man hath a mind to be doing also in Autumne, he may be bold to begin after the Equinox: for during the space of 40 dayes together, euen to the setting of the * Brood-hen star, there are no more but 14 days ill for planting. In Barbarie the people haue this practise peculiar to themselues, For to graffe in a wilde Oliue stock, whereby they continue a certain perpetuity: for euer as the boughs that were graffed, and (as I may say) adopted first, wax old and grow to decay, a second quickly putteth forth afresh, taken new from another tree, and in the same old stock sheweth yong and liuely; and after it a third successiuely, and as many as need; so as by this meanes they take order to eternise their Oliues; insomuch as one Oliue plant hath bin known to haue prospered in good estate a world of yeares. This wilde Oliue aforesaid may be graffed either with sions set in a cliffe, or els by way of inoculation with the scutcheon aforesaid. But in planting of Oliues this heed must be taken, that they be not set in a hole where an Oke hath been stocked vp by the root: for there be certain canker-wormes, called Erucæ in Latine, or Raucæ, breeding in the root of an Oke, which eat the same, and no doubt will do as much by the Oliue tree. Moreouer, it is found by experience better for Oliue trees, that their sets be not interred in the earth, nor yet dried, before they be planted. Also, the same experience hath taught, that for old Oliue trees, ouergrown with a kind of mossie skurfe, it is passing good, ech other yeare to scrape and claw them well, between the Spring and Æquinox, and the rising of the starre Vergiliæ or the Brood-hen: likewise to bestow mosse round about the root: mary euery yere they would be digged round about the root and laid bare after the sunstead with a trench made two cubits broad, and a foot deep: as also once in three yeres it were not amisse to cherish them with good dung. Ouer and besides, the same *Mago* saith, that almond trees ought to be planted between the setting of Arcturus and the shortest day in the yeare. As for Peare trees, they are not to be set all at one and the same time, for they blossom not all alike. They that beare either the long or round peares, haue their season from the occultation of the Brood-hen starre, vntill mid-Winter. All other sorts, and principally those that regard either the East or the North, are to be planted in mid-winter, namely after the retreit of the star called Sagitta [*i.* the Shaft.] The Lawrell would be put in the ground, from the Egle-star, vnto the fall of the Shaft aforesaid: for certainly the obseruation of the time, pertinent to the planting of trees, agreeth much-what after this maner; and for the most part, men do accord and ordaine, That it should be done in the spring and Autumne especially. Another season there is about the rising of the Dog-starre, which few men take knowledge of, because it is not so generally practised, nor found alike profitable to all countries: howbeit I must not ouerpasse it in silence, considering that my purpose is not to speake of this or that countries disposition, but to search into the nature of all things. In Cyrenaica therefore, a region in Africk, they vse to set trees about the time that the Etesian Northerne winds do blow: in Greece likewise they do the same, and namely in Laconia they suppose that to be the best time for the Oliue tree: & in the Island Cos the maner is then to plant Vines also. In all other parts of Greece they make no doubt to inoculate and to graffe in that season; but in no wise will they plant whole trees then. But herein it skilleth much to consider the nature of each tract and region: for in Egypt, they set, plant, and replant euery moneth of the yeare: in Æthiopia likewise, and India; and generally in all Countries whersoeuer it raineth not in Summer. Setting these respects aside, Trees require of necessitie to be planted in Autumne. Like as therefore there bee three seasons of planting Trees, so there are as many wherein they bud, and put forth new shoots; to wit, the Spring, the rising of the Dog-starre, and the apparition of Arcturus. And verily this is a thing worthy to be noted, that not onely

beasts

beasts and other liuing creatures haue an appetite to engender, but the earth also, and all the plants thereupon, are much more lusty and hot that way. And therefore to make them to conceiue in due season, the time would be well obserued, when they be as it were in loue, and desire the act of generation. And not onely in the earth and trees therein planted, is this to bee seene, but in grafts and stocks also particularly by themselues, since that they haue a mutuall and respective appetite, one to ioine and incorporate with the other. They that make choise of the Spring for this purpose, begin to put them as it were together for to ingender, presently after the Equinoctiall; giuing out in these plaine termes, that trees then are broody and ready to put forth sprouts; which is the reason, that their barkes at such a time will knit and ioine together easily. But such as prefer the Autumne before the Spring, fall to this businesse immediatly vpon the rising of the star Arcturus, for then they suppose, that plants will take root forthwith, & by the time that the Spring is come, they will be better prepared to put forth lustily; considering that their vertue is not streightwaies spent in budding, but rather imploied in taking good roor. Howbeit, some trees there be that haue their set times and seasons of the yere limited, whether it be to plant or to graffe: and the same indifferently in all places; as namely, Cherry-trees and Almond trees about the mid-winter. But for the most part, the scituation of the place will be able to guid and order all this matter best: for cold and watersh grounds ought to bee planted in the Spring: but dry and hot in the Autumne. With our peasants here in Italy, it is ordinary to diuide their times and seasons for planting in this manner following, They set out for the Mulbery all the time from the Ides of February to the spring Æquinox: for the Peare-tree they allow the Autumne, and so forward till 15 daies before the point of mid-winter, and no longer; for Summer apples and quinces, for Seruises likewise and plums, they assigne the space between the winter tropicke or Sun-stead, and the Ides of February. As for Carobes of Greece, and Peach-trees, they haue all the Autumne and the whole yere before them vntill mid-winter approch. All Nut-trees, as namely, Walnut trees, Pine-trees, Filberds, Hazels, and Chestnut-trees, would be planted from between the first day of March, and the 15 thereof. To conclude, the only time for willowes and broom, is about the Calends or beginning of the same March. But of these two last named, the Broom loueth to be set of Nource-plants, comming of seed, in dry and light grounds: but contrariwise, the willow to be set of twigs in moist places, according as we haue before said.

Chap. XIX.

¶ *What trees they be that loue to sort and keepe companie together. The skill and feat of baring the roots of trees, and also of hilling or banking them about.*

THere is besides a new manner of grafting trees, which I will not ouerpasse: for my purpose is not willingly to omit ought, that I haue found in any booke as touching this argument. And *Columella*, as himselfe affirmeth, was the first deuiser thereof, namely, to conioin trees of diuers natures, and such as otherwise cannot abide societie and fellowship together, as for example, Fig-trees and Oliue trees. He, I say, would haue a Fig-tree to be planted neere vnto an Oliue, and so neere indeed, as that a bough of branch of the oliue may reach vnto the Fig-tree at ease, considering that it is very supple and pliable otherwise, and ready to follow and be led as a man would haue it: and yet as obedient as it is, hee would haue it it euer and anone to be handled and made gentle in the meane time, that by this meanes inured first, it may bee bent and bowed to the purpose when the time serues. Which done, after that the Figge tree hath gotten some strength, and is growne to sufficient bignesse for to beare a graffe (which ordinarily is at three yeares end, or at the vtmost when it is fiue yeares old) the head thereof must be cut or sawed off, and then the branch or bough of the Oliue beforesaid, being well clensed and made neat, and the head end thereof (as is beforesaid) thwited and scraped sharpe, howbeit, not yet cut from the mother stocke, must bee set fast in the shanke of the Figge-tree, where it must bee kept well and surely tied with bands, for feare, that thus beeing forced and graffed arch-wise, it start and flirt not out againe, and returne vnto the owne. Thus beeing of a mixt and meane nature, betweene a branch or bough growing still vnto the Tree, and yet laied in the ground to take new root and an Impe or Sion graffed, for the space of three yeares it is suffered to feed and grow indifferently betweene two mothers, or rather by the meanes thereof, two mother-

stockes

ſtocks are growne and vnited together. But in the fourth yeare it is cut wholly from the owne mother, and is become altogether an adopted child to the Fig-tree, wherein it is incorporat. A pretty deuiſe, I aſſure you, to make a Fig-tree beare Oliues, the ſecret whereof is not knowne to euery man: but I my ſelfe do conceiue and ſee the reaſon of it well enough.

Moreouer, the ſame regard and conſideration aboue rehearſed, as touching the nature of grounds, whether they be hot, cold, moiſt, or dry, hath ſhewed vs alſo the manner of digging furrows and ditches. For in watery places it will not be good to make them either deep or large: whereas contrariwiſe, in a hot and dry ſoile they would be of great capacity, both to receiue and alſo to hold ſtore of water. And verily, this is a good point of husbandry for to preſerue not only yong plants, but old trees alſo: for in hot countries, men vſe in Summer time to raiſe billocks and banks about their roots, and couer them all therewith, for feare leſt the extreme heat of the Sun ſhould ſcorch and burne them. But in other parts the manner is to dig away the earth, and to lay the roots bare, and let in the wind to blow vpon them. The ſame men alſo in winter doe banke the roots about, and thereby preſerue them from the froſt. Contrariwiſe, others in the winter open the ground for to admit moiſture, to quench their thirſt. But in what ground ſoeuer it be where ſuch husbandry is requiſit, the way of cleanſing tree roots, and ridding the earth from them, is to dig a trench three foot round about. And yet this muſt not be don in medows, forasmuch as for the loue of the Sun, and of moiſture, the roots of trees run ebbe vnder the face of the earth. And thus much verily may ſuffice in generall, for the planting and graffing of all thoſe trees that are to beare fruit.

Chap. XX.

¶ Of Willow and Oſier plots: of places where reeds and Canes are nouriſhed: alſo of other trees that be vſually cut for poles, props, and ſtakes.

It remaineth now to ſpeake of thoſe trees which are planted and nouriſhed for others, and for Vines eſpecially: to which purpoſe, their wood is vſually lopped to ſerue the turne. Among which, Willowes and Oiſiers are the chiefe, and to be placed in the formoſt rank: and ordinarily they loue to grow in moiſt and watery grounds. Now, for the better ordering of the Oiſier, the place would be well digged before, and laid ſoft two foot and a halfe deep, and then planted with little twigs or cuttings of a foot and a halfe in length, and thoſe prickt in: or elſe ſtored with good big ſets, which, the fuller and rounder they be in hand, ſo much better they are for to grow, and ſooner will they proue to be trees. Betweene the one and the other, there ought to be a ſpace of ſix foot. When they are come to three yeares growth, the manner is to keepe them downe with cutting, that they ſtand not aboue ground more than two foot, to the end that they might ſpread the better in bredth, & when time ſerues be lopped & ſhred more eaſily, without the help of ladder: for the Withie or Oſier is of this nature, that the nearer it groweth to the ground, the better head it beareth. Theſe trees alſo, as wel as others, require (as men ſay) to haue the ground digged & laid light about them euery yere, in the month of April. And thus much for the planting and ordering of Oiſier willowes, which muſt be emploied in binding and winding. As for the other willow, which affoordeth big boughs, for poles, perches, and props, thoſe may be ſet likewiſe of twigs and cuttings, and trenched in the ground after the ſame manner. Theſe lightly euery fourth yere will yeeld good poles or ſtaues, & for that purpoſe would they then be ordinarily cut and lopped. If theſe trees become old, their boughs by propagation may ſtill maintain and repleniſh the place; to wit, by couching them within the ground; & after they haue lien ſo one yeare, and taken root, by cutting them clean from the ſtocke-father. An Oiſier plat of one acre ſtored thus, will yeeld twigs ſufficient for windings and bindings, to ſerue a vineyard of fiue and twenty acres.

To the ſame purpoſe men are wont to plant the white poplar or Aſpe, in manner following. Firſt, a piece of ground, or a quarter, muſt be digged and made hollow two foot deep: and therin ought to be laid cuttings of a foot and a half in length, after they haue had two daies drying: but ſo, as they ſtand one from another, a foot and a handbreadth, & be couered ouer with mould two cubits thick.

As touching canes and reeds, they loue to grow in places more wet and wateriſh than either the Willows and Oiſiers aboueſaid, or the Poplars. Men vſe to plant their bulbous roots, which ſome

ſome call their oilets or eies, in a trench of a ſpan depth: and thoſe two foot and an halfe aſunder. Theſe reeds do multiplie and increaſe of themſelues (if a plot be once planted with them) after the old plants be extirped & deſtroied. And ſurely, this is found now adaies to be the better and the more profitable way, euen to commit all to Nature, rather than to gueld and weed them out where they ſeem to grow ouer thick, as the practiſe was in old time: for the maner of their roots is, to creepe one within another, and to be ſo interlaced continually, as if they were twiſted together. The fit and proper time to plant and ſet theſe canes or reeds is a little before the calends of March, to wit, before the oilets or eies aboueſaid begin to ſwell. They grow vntill mid-winter, at which time they wax hard, which is a ſigne that they haue done growing: and this is the only ſeaſon alſo for to cut them. Likewiſe, the ground would be digged about them, as often as vines. The order of planting them is two manner of waies, for either the roots be laid ouerthwart or acroſſe, and but ſhallow within the ground (and look how many eies there be in the root, ſo many plants wil ſpring aboue the earth:) or els they be pitched down-right, within a graue or trench of a foot depth, ſo as there be two eies or buds vnder the ground, & the third aboue, but cloſe and meet with it: but this caueat is to be giuen, that the head thereof may bend forward toward the earth, for feare that it drinke in any dew, which might ſtand and ſettle vpon it. This alſo is obſerued, that they be cut euer in the wane of the Moone: as alſo, before that they are imploied about Vineyards for to beare vp vines, they would haue a whole yeares drying, for ſuch are more profitable than the greene.

The beſt ſtaies to beare vp Vines, are made of the Cheſtnut-tree: for why? the wood is gentle and tractable, tough withall, and induring long: beſides, it hath this property, that cut it when you liſt, it will ſpring againe more plentifully than any willowes. It loueth to grow in a gentle and ſandy ground, but principally, if the ſame ſtand vpon a moiſt grauell or a hot earth full of little pebbles, and namely, where there is good ſtore of ſuch ſoft ſtones, as will ſoone crumble into grit: neither makes it any matter how much the place be ſhadowed, nor how cold and expoſed to the Northern winds, for ſuch it liketh well enough, yea, although it be the ſide or hanging of an hill, as bleake and cold as may be. But contrariwiſe, it may not abide the red French earth, the chalkie or marle ground, nor in one word, any that is battle or fruitfull. Set it is of a Nut, as we haue beforeſaid: but it commeth not vp, vnleſſe there be fiue in a heape piled together, and thoſe of the faireſt & biggeſt ſort. Moreouer, the plot wherin you mean to haue Cheſtnuts grow, muſt be ouertly broken vp aloft, from betweene Nouember and Februarie: in which time the Nuts vſe to be looſe, and to fall of themſelues from the tree, and ſpring vnderneath, finding the ground light and hollow vnder them. Betwixt each heape ſet in manner aforeſaid, there ought to be a foot ſpace euery way, and the trench wherein they be ſet, of a ſpan depth: out of this plot, as out of a ſeminary and nource-garden, theſe yong plants are to be tranſlated into another, and then they muſt be ſet two foot aſunder. Howbeit, they ought to be aboue two yeres old firſt, before they be remoued and replanted. Moreouer, a man may increaſe Cheſtnut-trees by propagation; to wit, by couching and trenching the branches therof, as they grow to the mother: and there is not another tree againe that ſooner taketh that way, than it doth; for the root thereof being laid bare, the whole branch muſt bee interred along in the trench made for the purpoſe, leauing out the end only aboue ground. Thus ſhall you haue one tree ſpring from it, and another from the root. Howbeit, planted in this wiſe, it loueth not to be tranſplanted; it cannot lodge elſewhere, but dreadeth and hateth all change of ſoile: and therefore ſuch plots of ground as do affoord coppiſes of Cheſt-nut trees, are ſtored with plants comming of marrons or nut-kernels, rather than quicke-ſets or plants ſet with the root. For the ordering and dreſſing of them, there is no other labour required, than the others before rehearſed; namely, for the two firſt yeares inſuing to dig the ground looſe about their roots, and to proine or cut away the ſuperfluous twigs: for euer after they will ſhift well enough, & manure themſelues, by reaſon that their owne ſhade will kill thoſe ſuperfluous water-ſhoots that ſpring out either from the root or the ſides of the tree. A coppiſe of theſe trees is cut ordinarily within euery ſeuenth yere: and one acre of them will yeeld props enough for to ſerue a vineyard of twenty acres: for beſides that one pole of them will abide to be clouen and make two props apeece, they will laſt very well vntill the next fall of the wood or coppis be paſt.

Moreouer, the Maſt-tree called Eſculus, is planted and commeth vp in like ſort: howbeit, paſſing vntoward and vnwilling they are to grow, and therefore they ſtand ten yeres at leaſt before they

they be cut and lopped. Set Acorns of this tree Esculus wheresoeuer you please, they wil surely take and come vp: but the trench must be a span deep, and the Acornes two foot asunder. And foure times a yeare are they to be lightly *raked and clensed from weeds. A forke or prop made of this wood, lasteth very well and rotteth not: and in very truth, the more that the tree it selfe is cut and mangled, the better it springeth and putteth forth new shoots. G

* Seruitie.

Ouer and besides these trees abouenamed, there be others that vse to be cut and lopped for Vine props and staies; to wit, the Ash, the Bay tree, the Peach and Hazell tree, yea, and the Apple tree: but these are all of them lateward and slow of growth: neither will they indure so well without rotting, if they stand any time in the ground, and much lesse will they abide any wet. But on the othe side, the Elder tree of all others is most firme for to make poles and stakes of. It wil grow of sions and imps euen as the Poplar. As for the Cypresse tree, we haue of it spoken sufficiently already. H

Chap. XXI.

¶ *The manner and skill of husbanding and dressing Vineyards.*

NOw that we haue treated sufficiently of the instruments, furniture, and tackling as it were belonging to Vineyards, it remaineth to speake of the nature of vines, and to deliuer with especiall regard the manuring and dressing them. According therefore as wee may see in Vines and some other trees, which haue within them a spungeous matter and light substance, their twigs and branches do containe a kind of marrow or pith inclosed between certain knots or ioints wherewith their stalkes are diuided and parted. As for the fistulous concauities, they are but short all of them, and toward the top shorter and shorter, but euermore betweene two knots, they inclose the ioints aforesaid. Now this marow, this vegetatiue and vitall substance, I say (call it whether you wil) runneth forward stil on end al the length of the hollow kex or pipe so long as it findeth no resistance by the way: but meeting once with a ioint or hard knot which maketh head vpon it, not suffering the same to passe forward, it beeing driuen backe, returneth downward: howbeit, in that reuerberation, breaketh out vnder those knots, and putteth foorth certaine wings or pinnions like arme-pits, whereas the buds or leaues doe come; but alwaies in alternatiue course, one of this side, another of that; after the maner of reeds, canes, and fennell-geant, as hath bin shewed before; in such wise, that if one wing rise forth at the bottome of the lower knot on the right hand, another springeth for it on the left hand in that next aboue it; and thus they keep order the whole length of the branch. These sprouts when they are come once to some bigneſſe, and do branch there, be called of the Latines by a prety name, Gemmæ, as it were precious stones: but so long as they are no other than buds sprouting forth vnder the concauity or pit-hole of the foresaid ioints, they term them Oculos [i. Oilets or Eies:] marie in the very top they be named by them Germina [i. Sprigs or Burgeons.] After this order are ingendered the maine branches, the smaller * sprigs yearly cut away, the grapes, leaues, and yong tendrils of Vines. But hereat I wonder most, that the burgeons comming forth on the right side, be alwaies more tough and firm than those of the left. To come now vnto the planting of these vines: the shoots or branches must be cut iust in the midst between the foresaid knots or ioints, so as the marrow in no wise run out. And if you would plant fig-sets or sions, they ought verily to be a span long, and then to be prickt into the ground (but first there should bee a hole made with a little stake) with the greater end that grew next to the body of the tree downward: prouided alwaies, that two oilets or buds stand aboue ground. Now these oilets are properly (in twigs or sets of trees) those buds called, where the new spring first shooteth forth. And herupon it is, that these sions or cuttings being set in nource-gardens, beare the same yere that very fruit which they would haue borne vpon the tree, if they had not been cut off: and namely, if they be set in the right season whiles they be plump and full: for hauing conceiued on the Tree, they do consummat the sad conception so begun, and are deliuered thereof elswhere. And look what Fig-sets be in this manner planted, may be easily and without danger remoued and transplanted the third yere after. For certes, as this tree of all others soon ageth and indureth not long; so in recompence of short life, this one gift it hath of Nature, That it comes forward apace, quickly groweth to the full bigneſſe, and beareth fruit. I K L M

* Nepotes.

As for the Vine, there is not a tree that is planted more sundrie waies, nor affourdeth greater store

A store of sions or sets than it. For first and formost, nothing thereof is planted, but that which is vnprofitable, hurtfull, superfluous, and of necessitie to be pruned and cut away. But in the pruning, this rule must be obserued, that those branches bee cut off which were portoirs, and bare grapes the yere before. The manner in old time was to plant or set a sion, headed (as it were) and taking hold on both sides of the old wood and hard stock: whereupon, because it was fashioned like a little maller or hammer head, it was and is at this day called in Latine Malleolus. But afterwards they began to slip off a twig with a heele only of the old wood (as they vse to doe in a Fig-tree) & there is not a better way to make a Vine surely to take and liue than this. A third sort there is besides of sions or sets which are more readily gotten, without any such heele of the hard wood, and therefore they be wreathed and twined when they be set into the ground: B whereupon they be called in Latine Sagittæ [i. Shafts:] for the same sions only cut off and not wreathed, are named Trigemmes, as a man would say, twigs with 3 buds or spurts: & therefore of one and the same vine-branch, a man may in this sort make many kinds of sions or sets. Howbeit, that is to be noted, that if you set any yong sprigs that neuer bare fruit but leafe onely, the Vines comming thereof will be euer barren: and therefore none ought to be planted but such as are fruitfull. A vine-set or cutting, that hath ioints standing thin, but here & there, is thought to be fruitlesse: but contrariwise, if it be set thick with buds, by all likelihood it will beare plentifully. Some are of opinion, that no sions should be put into the ground, but those that haue floured already: also, that to set such cuttings as be called shafts, which haue no part of the old wood, is not so fit; for, that in removing they are in danger to break whereas they were writhen. C Now, when you haue gotten such sets as be meet for planting, let them be a foot long at the least, and carry fiue or six knots, and at this length they cannot possibly haue fewer than three buds. Moreouer, the best way is presently to set them the very same day that they be gathered. But in case a man be driuen to keep them long before they be put into the ground, great heed would be taken, according to the rule beforesaid, that they be not laid aboue ground, that they dry not in the Sun; that they take no wind; nor loose their fresh vigor by cold. And if it chance that they lie out any while in the dry aire, they would be laied to soke in water many daies together, vntill they be refreshed and look green again, before they be set into the earth. The plot or quarter within the nource-garden or vineyard, ought to be wel expосed to the Sun, of a good largeneſſe, and sufficiently moulded: also, it must be well digged for 3 foot broad with a grub- D bing double toothed forke: then must you goe deeper and cast vp the earth with a broad spade or shouell, after that the same hath bin broken vp with a mattocke or yron toole, carying foure foot in the head, so as the ditch may go two foot directly deep into the ground. Which done, the ditch is to be clensed, & the mould to be spread abroad, & not left lying raw in that maner, but to take a kind concoction in the weather. And herein must the labourer proceed and be ruled by measure, and trie his worke thereby: for if the earth be not well delued, it will be soone found out by the vneuen balks or beds. There would be a iust measure taken also of the allies that lie between the beds. All things being thus prepared, let vs come now to the planting of the sets aforesaid, which would be couched either in trenches made of purpose, or in long furrowes; and then the finest and most delicate mould that can be found, is to be cast aloft. But all E this preuaileth not in a leane and hungry ground, vnlesse fatter earth be laied as a pallet vnderneath. Moreouer, this is to be looked vnto, that two sets at the least be moulded and laid within the earth together in one range: also they must be so couched, that they leane with their heads close vpon the earth next about them; yea, and with one and the same stake the said earth ought to be driuen close and fast about them. Ouer ane besides, throughout the whole plot or quarter of this nource-garden, regard is to be had, that between euery two sets there be a foot & an half one way, to wit, in breadth; and halfe a foot another way, to wit, forward in length. These plants being thus ordered, after they haue growne to twelue moneths, they should be then discharged of all their burgeons, euen to the nethermost knot, vnlesse haply it bee spared and let alone: for F some there be that cut it also after these, commeth forth the matter of the oilets, & shew themselues; and therewith at the third twelue month end the quick-set root and all is remoued to another place in the vineyard.

Besides all this, there is another pretty and wanton deuise, more curious ywis than needfull, to plant Vines; and namely, after this manner. Take foure branches of foure vines growing together, and bearing sundry kindes of grapes; bind them wel and strongly together in that part

where

where they are most ranke and best nourished: being thus bound fast together, let them passe a- G
long either through the concauitie of an Oxe shanke and maribone, or els an earthen pipe or
tunnell made for the nonce. Thus couch them in the ground, and couer them with earth, so as
two ioints or buds be seen without. By this meanes they inioy the benefit of moisture, and take
root together: and although they be cut from their owne stocke, yet they put out leaues & bran-
ches. After this, the pipe or bone aforesaid is broken, that the root may haue libertie bo th to
spread and also to gather more strength. And will you see the experience of a pretty secret? you
shall haue this one plant thus vnited of foure, to beare diuers and sundry grapes, according to
the bodies or stocks from whence they came. Yet is there one fine cast more to plant a Vine,
found out but of late, and this is the manner thereof: take a Vine-set or cutting, slit it along
through the midst, and scrape out the marrow or pith very cleane; then set them together again H
wood to wood, as they were before, and bind them fast: but take heed in any case that the buds
or oilets without-forth be not hurt, nor rased at all. This done, put the same cutting into the
ground, interre it I say wel within earth and dung tempered together: when it begins to spread
yong branches, cut them off; and oftentimes remember to dig about it, & lay the earth light: &
certes, *Columella* holdeth it for certain, and assureth vs vpon his word, That the grapes comming
of such a vine wil haue no stones or kernels at all within them. A strange thing and passing won-
derfull, that the very set it selfe should liue; and that which more is, grow and beare, notwith-
standing the pith or marrow is taken quite away.

Furthermore, since we are entred thus far into this discourse and argument, I cannot passe by
but I must needs speake of such twigs and branches of trees as wil knit and grow together euen I
to a tree. For, certain it is, that if you take fiue or six of the smallest sprigs of box, binde them
together, and so prick them into the ground, they will proue and grow to one entire tree. How-
beit, in old time men obserued, that these twigs should be broken off from a Box tree, which ne-
uer had bin cut or disbranched, for otherwise it was thought verily they would neuer liue: but
afterwards this was checked by experience, and the contrary knowne. Thus much as touching
the order of Vine-plants, and their nource-garden for store.

It remaineth now to speak of the manner of Vineyards and Vines themselues. Where in the
first place, there offer vnto vs fiue sorts thereof. For some traine and run along vpon the ground
spreading euery way with their branches: others grow vpright and beare vp themselues with-
out any staies. Some rest vpon props, without any traile or frame at all: others be born vp with K
forkes and one single raile lying ouer in a long range: and last of all, there be vines that run vpon
trailes and frames laid ouer crosse-wise with foure courses of railes, in manner of a crosse dor-
mant. The same manner of husbandry that serues those Vines which beare vpon props without
any other frame at all, will agree well enough to that which standeth of it selfe without any
staies. For surely it groweth so, for default onely and want of perches and props. As for the vine
that is led vpon a single range as it were in one direct line, which they call Canterius, it is
thought better than the other, for plenty of liquor: for besides that it shadoweth not it selfe, it
hath the furtherance and help of the Sun-shine continually to ripen the grapes: it hath the be-
nefit also of the wind blowing through it, by which means the dew will not long stand vpon it.
Moreouer, it lieth more handsome to the hand for the leaues to be plucked away, and for the L
clods to be broken vnder it: & in one word, is readiest for all kind of good husbandry to be don
about it. But aboue all other commodities it hath this, that it is not long in the floure, but bloo-
meth most kindly. As for the frame aforesaid, that is ranged in one line a length, it is made of
perches or poles, reeds and canes, cords and ropes, or els lines of haire, as in Spaine and about
Brindis. The other kind of frame with railes and spars ouerthwart, beareth a vine more free, for
plenty of wine than the rest, and called this is *Complwiata vitis*, because it resembleth the hol-
low course of gutter tiles, that in houses receiue all raine water and cast it off. For as the crosse
dormant in building shutteth off the raine by foure gutters, euen so is this Vine led and caried
foure waies, vpon as many trailes. Of this Vine and the maner of planting it, we will only speak,
for that the same ordering will serue well enough in euery kind besides: marie there be far more M
waies to plant this than the rest, but these three especially. The first and the surest is, to set the
Vine in a plot well and throughly delued: the next to it, is in the furrow: the last of all, in a
trench or ditch. As for digging a plot and planting therein, ynough hath been written already.

CHAP.

A

CHAP. XXII.

¶ *Of furrowes and trenches wherein vines are planted: also of pruning vines.*

IT sufficeth that the furrow or trench wherin a vine is to be planted, be a spade or shouels bit
breadth: but ditches would be three foot long euery way. Be it furrow, trench, or ditch, wher-
in a vine is to be replanted, it ought to be three foot deepe; and therefore no plant thereof
should be remoued so little, but that it might ouer and besides stand aboue ground, and shew
two buds at the least in sight. Needful it is moreouer, that the earth be well loosened and made
more tender and gentle, by small furrowes ranged and trenched in the bottom of the ditch; yea
B and be tempered sufficiently with dung. Now if the vineyard lie pendant vpon the hanging of
the hill, it requireth deeper ditches, and those raised vp well-with earth and bedded, from the
brims and edges on the lower ground. As for such which shall be made longer, and able to re-
ceiue two vine-plants growing contrary one to the other, they shall be called in Latine, Alvei.
Aboue al, the root of the vine ought to stand just in the midst of the hole or ditch; but the head
and wood thereof which resteth vpon the sound and firme ground, as neere as possible is, must
beare directly into the point of the Æquinoctiall Sun-rising: and withall, the first props that it
leaneth vpon, would be of Reeds and Canes.

As touching the bounding and limitation of a vineyard, the * principall way which runneth * *Decumanus*
streight East and West, ought to carry 18 foot in breadth, to the end that two carts may passe *Limes.*
C easily one by another, when they meet; the other crosse allies, dividing euery acre just into the
mids, must be ten foot broad: but if the plot or modell of the vineyard wil beare it, these * allies * *Cardines.*
also which lie North and South, would be as large ful as the foresaid principal high way. More-
ouer, this would be alwaies considered, That vines bee planted by fiues; (*i.*) that at euery fifth
perch or pole that shoreth them vp, there be a path diuiding euery range and course, and one bed
or quarter from another. If the ground be stiffe and hard, it must of necessitie bee twice digged
ouer, and therein quick-sets only that haue taken root, must be replanted: marie in case it be a
loose mould, light, and gentle, you may set very cuttings and sions from the stock, either in fur-
row or in trench, chuse you whether. But say it be a high ground and vpon the hill, better is it
to cast it into furrowes ouerthwart, than to dig it; that by this meanes the perches or props may
D keep vp the ground better, which by occasion of raine water would settle downeward. When
the weather is disposed to raine, or the ground by nature drie, it is good planting vine-sets, or si-
ons at the fall of the leafe, vnlesse the constitution of the tract and qualitie of a country require
the contrary: for a dry and hot soile would be planted in Autumne or the fal of the leafe, wher-
as a moist and cold coast may tarry, euen vntill the end of Spring. Let the soile be dry and hard,
bootlesse it will be to plant, yea though it were a very quick-set, root and all. Neither will it
do well to venter the setting of imps cut from the tree, in a drie place, vnlesse it be immediatly
vpon a good ground shower: but in low grounds, where a man may haue water at will, there is
no danger at all to set vine branches, euen with leaues on the head; for they will take well e-
nough at any time before the Mid-summer Sun-stead, as we may see by experience in Spaine.
E When you will plant a vine chuse a faire day; and if possibly you can, let it be when there is no
wind stirring abroad; for such a calme season is best: and yet many are of opinion, that Sou-
thern winds be good, and they with for them; which is cleane contrarie vnto *Cato* his mind, who
expresselv exceipteth and reieteth them. If the ground be of a middle temperature, there ought
to be a space of fiue foot distance between euery vine: and in case it be a rich and fertile soile,
there would bee foure foot at least from one to another; but in a leane hungrie piece of light
ground, there should be eight foot at the most: for whereas the Vmbrians and Marsians leaue
twenty foot void betweene euery range of vines, they doe it for to plough and sow in the place,
and therein they haue quarters, beds and ridges, called Porculeta. If the place where you plant
a vineyard be subiect to thicke and darke mists, or to a rainie disposition of the weather, vines
F ought to bee set the thinner: but in a drie quarter, it is meet they should bee planted thicke.
Moreouer, the wit and industrie of man hath found out meanes to saue charges, and in setting a
nource-garden with vine-sions to goe a nearer way, with small expence and no losse of ground:
for in replanting a vineyard with quicke-sets vpon a leuell plot, onely digged and laied euen,
they haue with one and the same labour (as it were by the way) repleni shed the ground be-

tweene euery such rooted plants, with vine cuttings for store, so as the quicksets may grow in his owne place appointed, and the sion or cutting (which another day is to be transplanted) in the mean time take root between euery course and range of the said vine quick-sets, before they be ready to take vp much ground. Thus within the compasse of one acre, by iust proportion a man may haue about 16000 quick-sets. This is the difference only, that such beare not fruit so soon by two yere: so much later are they that be set of sions, than those that were transplanted and remain stil on foot. When a quick-set of a vine is planted in a vineyard, and hath grown one yere, it is vsually cut downe close to the earth, so as but one eie or button be left aboue ground, and one shore or stake must be stickt close to it for to rest vpon, and dung laid well about the root. In like manner ought it to be cut the second yeare. By this means it gathereth strength inwardly, and maintaineth the same in such wise, as it may be sufficient another day to beare and sustain the burden both of branch and bunch, when it shall be charged with them: for otherwise if it be let alone and suffered to make hast for to beare, it would prooue to be slender, vinewed, leane, and poore: for surely this is the nature of a vine, That she groweth most willingly: in such sort, that vnlesse she be kept vnder, chastised, and bridled in this manner (her inordinat appetite is such) she will run her selfe out of heart, and go all to branch and leafe.

As touching props and shores to support vines, the best, (as we haue said) are those of the Oke or Oliue tree; for default whereof, ye may take good stakes and forks of Iuniper, Cypresse, Laburnium, and the Elder. As for those perches that be of other kinds, they ought to be cut and renewed euery yeare. Howbeit, to lay ouer a frame for vines to run vpon; the best poles are of Reeds and Canes, for they will continue good fiue yeares, being bound many of them together. When the shorter branches of a vine are twisted one within another in manner of cording or ropes, and strengthened with the wood of vine cuttings amongst, thereof arch-worke is made, which in Latine they call Funeta. Now by the time that a vine hath growne three yeares in the vineyard, it putteth forth apace strong branches, which in time may make vines themselues; these mount quickly vp to the frame: and then, some good husbands there be, who put out their eies, that is to say, with a cutting hook (turning the edge vpward) fetch vp the eies budding out beneath: thus by pruning, although they seem to do hurt and wrong vnto them, yet they draw them to shoot out the longer by the meanes: for in good faith, the more profitable way it is, thus to vse & acquaint it with bearing branches lustily; and far better and easier is it besides to cut away these yong imps as the vine lieth fast joined to the frame, vntill such time as a man think it be strong enough of the wood. Others there are, who in no case would haue a vine touched or medled withall, the next yeare after that it is remooued into the vine-yard; nor yet to feele the edge of the cutting hooke, vntill it haue fiue yeres ouer the head; mary then they agree it should be pruned & guelded of all the wood it hath, saue only three burgeons. You shal haue some againe that will indeed cut them the very next yere after they be replanted, but so as they may win euery yere three or foure ioints; and when they be foure yeres old and not before, they giue them liberty to climbe vpon the frame. But this (I assure you) is the next way to make the vine fructifie slowly and late: besides, it causeth it to seem scortched and full of knots, yea and to grow like a dwarfe or wreckling. The best simply, is to suffer the stocke or mother to bee strong first, and afterwards let the branches and yong imps hardly, be as forward and audacious as they will. Neither is it safe trusting that vine which is full of cicatrices or skarres (a thing that proceeds of great errour and an vnskilfull hand;) for surely all such branches grow of hurts or wounds, and spring not one jot from the mother stock indeed: for all the while that shee gathereth strength, her whole vertue remaineth within her; but when she is suffered to grow and fructifie, she goeth throughly to worke, and emploieth her forces full and whole to bring forth that, which yeerely shee conceiued: for Nature produceth nothing by halfes nor by peece-meale, but is deliuered of all at once. Well then, after that a vine is once full grown and strong enough, let it presently run vpon perches, or be led in a traile vpon a frame; but in case it bee yet with the weakest, let it be cut againe, and take vp her lodging hardly beneath vnder the very frame: for in this point the question is not, what Age, but what Strength it hath? for that is it which must rule all. And verily great folly and rashnesse it were, to put a vine to it, and let her haue the will to grow ranke, before she be as big full as a mans thumbe. The next yere after that it is gotten to the frame, there would be saued and let to grow one or two branches, according to the strength and ability of the mother: & let the same the yere following also be preserued, nourished,

A nourished, and permitted to grow on end, vnlesse her feeblenesse be against it: but when the third yeare is come, and not afore, be bold to giue her the head with two branches more, and neuer let her goe but with foure at the most. In one word, hold a vine downe as much as you can, neuer cocker and cherish her, but rather represse her fruitfulnesse; for of this nature is the vine, Rather than her life, she would be alwaies bearing; neither taketh she such pleasure to liue long, as to beare much: and therefore the more you take away of her ranke and superfluous wood, the better will she imploy her radicall sap and moisture to fructifie and yeeld good store of grapes: yet by her good will she would be euer putting forth branches for new plants, rather than busie in bearing fruit: for well woteth she, that fruit will fall and is but transitory. Thus to her owne vndoing and ouerthrow, while shee thinketh to spread and gaine more ground, shee spends her
B strength, her selfe and all. Howbeit, in this case, the nature of the soile will guide a man and advise him well: in a lean and hungry ground, although the vine be strong enough, you ought to keep it downe with cutting, that it may make abode vnder the head of the traile and frame aboue; and howsoeuer she may haue some hope that her young branches may get vp to the top, (as being at the very point to mount aboue it, and so neare as that they reach thereunto) yet let her stay there and proceed no farther: suffer her not (I say) to lay her head thereupon and couch vpon the traile, nor wantonly to spread and run on at her ease. In this manner (I say) hold her head in with the bridle, that she may in the end chuse rather to grow big in body & strong withall, than to shoot forth branches about her euery way far and neare. The same branch now that is kept short of the frame, ought to haue two or three buds to burgen at, and to bring forth more
C wood in time: and then let it be drawne and trained close vnto the traile and tied fast thereto, that it might seeme to beare vpon it and be supported thereby, and not to hang loosely thereupon. Being thus bound to the frame, it must likewise be tied anon, three buds or joints off: for by this means also the wood is reclaimed and represſed from running out in length beyond all measure, and the burgeons in the way between will come thicker & shoot vp on heigth, to furnish the husbandman with store of new sets and sions for the next yeare. The very top end in no wise must be tied. Certes this property and qualitie hath the vine, That what part soeuer of it is dejected and driuen downward, or els bound and tied fast, the same ordinarily beareth fruit, and principally in that very place where it is bowed and bent in manner of an arch. As for the other parts which be backeward and neerer to the old maine stocke, they send out store of new
D branches indeed, full of wood, but otherwise fruitlesse that yeare: by reason (I suppose verily) of the spirit or vegetatiue life, and that marrow or pith whereof wee speake before, which findeth many stops and lets in the way. Howbeit these new shoots thus putting forth, will yeeld fruit the next yere. Thus there offer vnto vs two kinds of vine branches: for that which springeth out of the hard and old wood, and promiseth for that yeare following nothing but sprigs and twigs onely, is called Pampinarium: whereas that which commeth more forward beyond the cup or cicatrice, and beareth shew of grapes, is named Fructuarium. As for another, springing from a yeare-old branch, it is left alwaies for a breeder and kept short vnder the frame: as also that which they terme Custos, [i. the Keeper, or Watch:] a young branch this is, and no longer than it may well carry three buds: which the next yeare is like to beare wood and repaire all, in case
E the old vine stocke should miscarry and spend it selfe by carrying too great a burden. Also another burgen there is close to him, bearing out like a knob, of the bignesse of a wart (called he is Furunculus) who must serue the turne and make supply, if peraduenture the foresaid Watch or Keeper faile.

Moreouer, a vine if it be suffered to beare before the seuenth yeare after it was first set of a cutting or sion, decaieth sensibly and soon dieth: neither is it thought good to let the old wood run on still in length vpon the frame, as far as to the fourth forke that vnderproppeth it, (such old crooked branches some call Dracones, others Iuniculos) to make thereof huge and great trailes of vines termed Masculeta. But worst of all it is, to seeme for to propagate or draw in a long traile within the ground vines in a vineyard, when they be growne hard with age. When
F the vine is fiue yeares old, a man may boldly wind and twine the very branches, so as out of euerie one therebe a twig let to grow at liberty: thus he may proceed forward to the next; cutting away the wood as he goeth that bare before. The furer way euermore is supposed to leaue the Watch or Keeper behind; marie he must be next vnto the vines maine bodie, and neareſt the root, and no longer than is before set downe. Now in case the branches proove ouer ranke,

they must be writhed and twisted in maner aforesaid, so as the vine stock may put forth no more G
than foure boughs at the most, or twaine if so be it rest vpon one chanter or range of perches. If
you would order a vine so as it may stand alone without any props, at the beginning it would
desire and haue some supporter or other (it makes no matter what) to rest vpon, vntill it haue
learned to stand of it selfe, & rise vpright: afterwards, it is to be vsed in manner of all other vines
when this training is past. This regard would be had in pruning and cutting the twigs of these
vines called Pollices, That a man well guide and ballance his hand, and go euen withall in euer-
y part indifferently, for feare lest one side be charged with fruit or branch more than the other:
where by the way, he must also remember to keepe downe the head, and not suffer it in any wise
to run vp in height: for if this kind of vine be aboue three foot high, it wil hang the head down-
ward. As for others, they may well grow to fiue foot and vpward, so that they passe not in any H
case the full height of a man. To come now vnto the other vines that creepe along and spread
ouer the ground, they be inuironed all the way as they run, with pretty short hollow cages as it
were, to rest and repose their branches in. They haue need moreouer of certaine trenches or dit-
ches round about to run in, to the end that as the said branches wander too and fro, they should
not incounter one another and striue together. And verily in most parts of the world, they vse
to gather their vintage of vines thus growing low by the ground: as we may see the manner is
in Africke, Ægypt, Syria, throughout all Asia, and in many places of Europe. For the good
vsage and dressing of these vines, a speciall care would be had to keepe them downe close to the
earth; and to fortifie the root, so long and in the same manner, as hath beene shewed before in
those, that are shored or beare vpon frames; with this charge and regard besides, to leaue alwaies I
the short twigs only called Pollices, with three buds a piece, in case the ground be fruitfull; or
* Quinis, ra- * fiue, if it be light and lean. And in one word, better it is without all question, that they be left
ther Binis, ô twaine. many, than long. As for those points which we haue deliuered heretofore, as touching the na-
ture of the soile, they will be more effectually seen to proue either the goodnesse or the contra-
ry, in the grapes of this vine, by how much nearer they lie to the ground than others. Wherein
consideration is to be had of the sundry sorts of vines; namely, that they be seuered apart; and
nothing is better, than to sort euery one with the tract or region that agreeth best with it, and
therein to plant them accordingly: for these mixtures of diuers kindes are neuer good, but al-
waies discordant: naught in old wines that come to our table, much worse then you may bee
sure, in those that be new and not yet tunned vp. But if a man will intermingle plants of sundry K
vines together, yet in any case those would be ioined together (and none els) which ripen their
fruit at one and the same time.

For frames and trailes wherein vines are to run, the better and more battle that the ground of
the vineyard is, the plainer and euener that it lieth, the higher they would be from the ground;
likewise if the place be subiect to dews, fogs, and mists, and nothing exposed to the winds: con-
trariwise, if the ground be leane and dry, hot, and open to the winds, they must be the lower and
nearer the earth. As concerning the rafters, that lie ouer & reach from prop to prop, they ought
to be tied and fastened thereto with as streight and sure a knot as is possible; whereas the Vine
would be bound vnto them, but slacke. Of the sundry sorts of Vines, as also which were to be
planted in this or that soile, and what coasts & climats each one of them loueth, we haue shew- L
ed sufficiently in the particular treatise of their nature, and of the wines that come of them.

Touching all other points of husbandry that remaine behind; much doubt and diuers que-
stions are made: for many there be that feare not all Summer long to bee digging in the vine-
yard about vine-roots, after euery little raine. Others again forbid to meddle & be lusty therin,
in the budding time: for it cannot be auoided, but that the yong oilets will either bee smitten
off clean, or els galled or bruised one time or other, with their gate that go in and out between:
which is the cause, that they would haue all kind of cattell to bee kept out that they come not
neare, and especially such as beare wooll on their backs; for sheep of all others sooneſt rub off
the buds as they passe by, with their shag coats. Moreouer, they are of opinion, that all manner
of raking and harrowing, is an enemy to vines when they bee in their floure, and putting foorth M
young grapes: and sufficient it is (say they) if a vineyard be delued thrice in one yere; to wit, first
from the spring Æquinox, to the apparition of the Brood-hen star; secondly, at the rising of
the great Dog-star; and thirdly, when the grape beginneth to change colour and turne blacke.
Others set out these times after this maner: if the vineyard be old, they would haue it once dig-
ged

A ged betweene vintage and mid-winter; how soeuer some be of this mind, That it sufficeth them
to bare the roots only of the vines and lay dung thereto. The second deluing they would haue
to be from the Ides of Aprill, and six daies before the Ides of May; that is, before they begin to
conceiue and bud: and thirdly, before they fall to blossome; also when they haue done flouring;
and also at the time when the grapes alter their hew. But the more skilfull and expert husbands
affirme constantly, That if the ground be ouermuch laboured, and digged too often, the grapes
will be so tender skinned, that they will burst againe. Moreouer, these rules following are to bee
obserued, That when any vines do require such deluing and digging, the labourers ought to goe
to worke betimes before the heat of the day: mary if the vineyard stand vpon a mirie clay, it is
not good then either to eare or dig it, but rather to wait for the hot season; for the dust that ri-
B seth by digging, is very good (by their saying) both to preserue the vine and grapes from the
parching Sun, and also to defend them against the dropping mists.

As for disburgening of vines, and clensing them of their superfluous leaues, all men accord,
that it should be done once in the Spring; to wit, after the Ides of May, for the space of eleuen
daies following; and in any hand before they begin to put forth floure. And how much there-
of must be thus diffoiled for the first time? euen all that is vnder the traile or frame, & no more.
As for the second, men be not all of one minde; some would haue the leaues to be disbranched
when the vine hath done flouring: others expect, vntill the grapes begin to be ripe. But as tou-
ching these points, the rules that *Cato* giueth, wil resolue vs: for we are now also to shew the ma-
ner of cutting and pruning vines. Many men begin this worke immediatly after vintage, when
C the weather is warm and temperat: but indeed (by course of Nature) this should neuer be done
before the rising of the Ægle star (as we will more at large declare in the next booke, where we
are to treat of the rising and fall of the fixed stars and of their influences) or rather in truth, when
the Westerne wind Fauonius beginneth to blow, for asmuch as there might be danger in going
ouer soon to work, considering that haste commonly maketh waste. For this is certain, that if there
come an after-winter, and chance to bite the vines newly medicined (as it were) or rather fore
with this pruning, if it happen (I say) that when euery man makes reckoning that winter is gon,
it come vpon them againe and whiske with his taile, their buds pinched with cold will lose
their vigor, their wounds will cleaue and make rifts, in such sort, that when the humidity is di-
stilled and dropped forth, the oilets wil be nipt and burnt away with the bitternesse of the vn-
D seasonable weather, for who knoweth not, that in frost it is tickliſh medling with vines, and that
they be in danger soon to breake and knap asunder? To say therefore a truth, by order of Nature
there would not be such haste made. But here is the matter, they that haue a large domaine and
much lands to look vnto, they that must go through a great deale of work, cannot wil nor chuse
but begin betimes, and make this computation and reckoning aforesaid. And in one word, the
fooner that vines be pruned (if the time wil serue commodiously) the more they run into wood
and leaues; and contrariwise, the later you go to work, the more plenty of grapes they wil yeeld:
and therefore it is meet and expedient to prune vines that be poore and feeble, very timely; but
such as be strong and hardy, last of all.

As for the manner and fashion of the cut, it ought alwaies to be aslant, like a goats foot, that
E no drops of raine may settle and rest thereupon, but that euery shower may soon shoot off: also
that it turn downeward to the ground, that it be euen and smooth made with a keen and sharpe
edged bill or cutting hook. Furthermore this heed would be taken, that the cut be iust between
two buds, for feare of wounding any of the oylets neere vnto that part which is cut off: and
commonly this is supposed to be blacke and duskish, and so long as it is so seen, it ought to be
cut and cut again, vntill you come to that which is sound and cleare indeed: for neuer shall yee
haue out of a faulty and corrupt wood, any thing come forth that will bee worth ought. If the
vine be so poore and leaf that it affordeth no branches meet and sufficient to beare, cut it down
to the verie ground, for best it is then to fetch new from the root, and to see whether they will
be more lively. Ouer and beside in disburgening and defoiling a vine, you must beware how
F you pluck off those burgeons that are like to beare the grape, or to go with it; for that were the
next way to supplant (as it were) the grapes, yea and kill the vine, vnlesse it were a new and yong
plant. Will you then know which are vnprofitable and may be spared? euen all those are dee-
med superfluous, which are come not directly from the knot or neere oilet, but grow out of the
side: and no maruell, since that the verie branches of grapes which hang in this manner out of

the hard wood,are ſo ſtiffe and tough alſo,that vnneth a man may plucke them off with his fingers,but had need of a knife or hook to cut them away. G

As for the pitching of props into the ground,ſome are of opinion that the beſt way is to ſet them between two vines: and indeed that were the eaſier way to come about the vines, for to lay their roots bare when time ſerueth. Alſo, better it is far ſo to doe, in a vineyard where the vines run vpon one ſingle traile, in caſe the ſaid traile be ſtrong enough, and the vineyard not ſubiect to the danger of winds: but where a vine runneth foure waies, it muſt be relieued with prop and ſtayes as neer as may be,to ſupport the burden; yet ſo,as they be no hinderance when as men ſhould come about the foot to lay the root bare: and therefore they would be a cubit off,and no more. Moreouer,this is a general rule,that a vine be clenſed about the root beneath, before that it be pruned aboue. H

Cato treating generally of all maters concerning vines, writeth thus by way of rule and precept; Let your vine (quoth he) be as high as poſſibly you can: faſten it to the frame decently, but take heed you bind it not too hard. Dreſſe and order it after this manner: After you haue cut away the tips and tops therof,dig round about the roots, and begin then to eare vp & plow the vineyard: draw furrowes and ridges too and fro throughout. Whiles vines be yong & tender,couch the branches within the ground for propagation,with al ſpeed: as for old vines,geld them as little as you can,& keep them with a good head; rather if need require,lay them along on the ground,and two yeares after cut them hard to the root. If it be a yong vine,attend vntill it be of ſtrength ſufficient;then will it be time and not afore to prune it. If haply the vineyard be bare and naked of vines,and that they grow but thin here and there,make furrowes and trenches between,and therein plant new quickſets: but rid the weeds well from about thoſe Trenches,for ouerſhadowing them: be euer alſo digging and delving. Then,if it be an old vineyard, ſo drage and pulſe for prouender: if it be a lean and light ground,ſow nothing that bears grain or corn. Be ſure that ye lay about the heads of the ſaid quickſets,dung,chaffe,refuſe of grapes preſſed,and ſuch like mullock. When the vine beginneth to put out leaues and look green, fall to disburgeoning. So long as the Vines be yong and tender,tie them ſurely in many places,for feare leſt the wood or ſtalk therof do break aſunder. But when a vine hath gotten head to perch aloft vpon a ſingle traile, gently binde the tender burgeons and branches thereof, extend and ſtretch them out,and lay them ſtreit. Now when they ſtand once vpright and are able to beare themſelues,mark when the grapes begin to change colour,bind them wel and ſure below. I K

As for graffing of vines, there are two ſeaſons of the yeare meet therefore: the one in the ſpring,the other when the vine doth floure,and this is held for the beſt. If you purpoſe to tranſlate an old ſtock of a vine into another place,and there to replant it,cut off the firſt thick arm only,leauing behind two buds and no more. In taking of it vp,be carefull that you do it with ſuch dexteritie,as that you race not nor wound the root. This done,look how it grew before, ſo ſet it now,either in trench or furrow: couch it wel and cloſe,and couer it throughly with good mould. After the ſame manner as is beforeſaid vnderſet and prop it vp, bind it,turn and winde it; but aboue all be euery while digging about it. As touching the drage called Ocymum, the which *Cato* wills to be ſowed in a vineyard,it is a kind of forage or prouender for horſes,which the Latines in old time named Pabulum; it commeth vp very ſpeedily and groweth faſt, and beſides can well away with ſhadowie places. L

Chap. XXIII.

¶ *Of Trees ranged in rewes for to ſupport Vines.*

IT remaineth now in this diſcourſe and treatiſe of Vines,to write of the manner of trees planted of purpoſe for to ſerue their turn. And here I canot chuſe but cal to mind,firſt,how this point of husbandry hath bin iudged naught, and altogether condemned by the two *Sarſennæ*,both father and ſonne; but contrariwiſe held for good, and highly commended by *Scroſa*: whereas all three were reputed the moſt antient writers,and skilfulleſt in this kind next to *Cato*. M And yet *Scroſa*, as great a patron as he is thereof, alloweth not this deuice in any clymate elſe but only in Italy. Howbeit,gon this hath for currant many yeares paſt, and time out of mind, That the beſt and moſt dainty Wines came of thoſe grapes onely which grew vpon ſuch Hautins or trees beforeſaid. Yea,and it was thought generally, that the higher a Vine climbed vpon

A on theſe trees,the better grapes it bare,and yeelded more commendable wine: and againe, the lower that thoſe trees were,the greater plenty followed both of the one & the other. By which a man may ſee how materiall it is to raiſe Vines on high, and haue grapes growing in the top of trees. In which regard,choiſe alſo is to bee made of trees for this purpoſe. And here firſt and formoſt is preſented vnto vs the Elme: and yet I muſt except that kind of it which is called Atinia,by reaſon that it is ouermuch charged with boughes and leaues,and therewith too full of ſhade. Next vnto it may be ranged the blacke Poplar,euen for the ſame cauſe,becauſe it is not leaued nor branched ſo thick. Many men there be that refuſe not the Aſh, the Fig tree,yea and the Oliue,ſo that it ſtand not ouer thicke with boughs,and make too much ſhade. As for the ſetting,planting,and ordering of theſe trees in general,we haue ſufficiently and to the full treated heretofore. But now for this ſpeciall and peculiar vſe that they be put vnto, this would bee B conſidered, That Vines which are to be wedded to theſe trees,muſt in no wiſe feele the edge of the cutting hooke,before they be three yeares old full. After which time,this regard ought to be had,that euery ſecond branch or arme thereof is to be ſpared,and likewiſe each other yeare and no oftener they are in this wiſe to bee pruned: and by that they are ſix yeres old, it is good time to joine them in marriage vnto their husbands aforeſaid.

In Piemont, Lombardie, and thoſe parts of Italy beyond the riuer Po, they vſe for this purpoſe to plant their grounds with theſe trees ouer and beſides thoſe aforenamed,to wit,the Cornell,the Opiet or Wich-hazell,the Teil or Linden,the wild Aſh Ornus, the Carpin Carme or Horn-beame,and the Oke. About Venice and all that tract, the Willowes ſerue the turne and C none elſe, by reaſon that the whole ſoken ſtandeth ſo much vpon water.

As touching the Elme,named in the firſt place,it muſt be kept plaine and bare,and the great water-boughs vnderneath ſhread vntill you come to the middeſt of the tree,or thereabout;and then the reſt ought to bee arraunged and digeſted into good order, whereupon the Vine may climb as it were vpon ſtaires or ladder rounds: and lightly none of theſe trees vpward be aboue twentie foot high. Now in caſe it be a high ground vpon an hil,and drie, they are permitted to branch and ſhut out their armes,within eight foot of the ground. But in plaines and low moiſt grounds,they begin not to fork before they bear twelue foot. Howbeit,let the place be what it wil,the flat of the tree from whence the boughs begin to diuide, ought to regard the ſouth ſun. And the ſaid branches immediatly from their project muſt riſe ſomewhat vpright in maner of D fingers,ſtanding forth from the palm of ones hand,among which,the ſmal ſprigs muſt eftſoons be barbed (as it were) & ſhaued clean off,for feare they do not ouerſhadow the Vine branches.

As touching the ſpace or diſtance between one tree & another, the ordinarie proportion is, that afront and behind,in caſe the ground be erable, it beare fortie foot: but aflanke, or on the ſide, twentie. Marie,if it be not well tilled and husbanded,ſo much wil ſerue euery way,to wit, twentie foot and no more. Commonly euery one of theſe trees maintaineth tenne Vines at the foot therof: and a bad husband he is who hath fewer reared about it than three. But by the way, it is no good husbandrie to ſuffer a tree thus to be coupled (as it were) in marriage to ſo many Vines,before that it be of ſufficient ſtrength to entertain them: for there is nothing ſo hurtfull, by reaſon that the Vines will choke and kill them; ſo quick they be of their growth,and ſo rea- E die to ouercharge them.

As for planting of Vine-ſets to the root of trees,needful it is to make therfore a ditch three foot deep: and they ought to be diſtant one from another a ful foot, and ſo much likewiſe from the tree. This don,there is no queſtion thereof the ſmal twigs or ſhoots what to do with them? neither is there any charge or expence required for digging and deluing: for this is the manner of it,and this peculiar gift haue theſe tree-rows, That in the ſame ground where they grow,the ſowing of corne is nothing hurtfull,nay,it is profitable and good for the Vines. Moreouer,this commoditie and eaſement commeth of their height,that they be able to ſaue themſelues: neither is there any ſuch need,as in other Vineyards,to be at the coaſt of walls,of mounds,pales,or hedges, ne yet of deep ditches or other fences,to keep off the violence or injuries of beaſts. Of F all other toiles before rehearſed, there is no more required but to looke vnto onely the getting of quick-ſets, or couching ſions: all the matter I ſay lieth herein, and there is no more to do.

But of couching ſions and that kind of propagation,there be two deuiſes. Firſt within paniers or baskets vpon the boughs of the tree, and that is the be beſt way, becauſe it is faſeſt from the danger of cattel. The ſecond is,to bend the Vine,or a branch therof,cloſe to the foot of her

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owne tree,or elſe about the next vnto it:if it ſtand ſingle and haue no Vine ioined vnto it. As much of this branch or Vine thus couched as is aboue the ground,muſt be kept with ſcraping; that is to ſay,the buds ought euer and anone to be knapt off,that it ſpring not forth. Within the earth there ſhould be no fewer than foure joints or budding knots buried and entered for to take root;in the head without,two onely are left for to grow. [Where, note by the way,that the Vine which groweth to the foot of a tree,muſt be trenched in a ditch foure foot long in al, three in breadth,two and an halfe in deapth.] Now, when the ſion thus couched, hath lien one yere,the order is to cut it toward the ſtock to the very pith or marrow,that ſo by little and little it may be inured to fortifie it ſelfe vpon the own roots,and not to hang and cling alwaies to the mother:as for the other end or head thereof,it would be cut off alſo ſo neere the ground, as that there be but two only buds left. By the third yeare it muſt be quite cut in two,(where before it was but guelded to the pith)and that which remaines of it, laid deeper into the ground, for feare it ſhould ſprout foorth and beare leaues toward that ſide where it was cut in twaine. This done,no ſooner is Vintage paſt,but this new quicke-ſet,root and al,muſt be taken vp and replanted.

Of late daies deuiſed was the manner of couching or planting by a trees ſide a Vine Dragon (for ſo we vſe to call the old branch of a Vine paſt all ſeruice,which hath done bearing many a yeare,and is now grown to be hard.) And verily,they vſe to make choiſe of the biggeſt they can find,which when they haue cut from the ſtocke, they ſcrape and pil the bark, three foure parts in length,ſo farre forth as it is to lie within the ground[wherupon they name it in Latine Raſilis:]when it is thus couched low within a furrow, the reſt that is aboue the earth they rear vp againſt the tree. And it is thought,that there is not ſo good nor ſo ready a mean to make a Vine grow and beare than this. If it fall out ſo, that either the Vine be ſmal and weak,or the ground it ſelfe but lean and hungrie,it is an vſuall and ordinarie practiſe to cut and prune it as neer the ground as poſſibly may bee,vntill ſuch time as it bee well ſtrengthened in the root,as alſo,great regard is had, that it be not planted when the deaw ſtandeth vpon it, ne yet when the wind ſits ful in the North. The old Vine ſtock it ſelf ought to look into the Northeaſt,prouided alwaies that the yong branches turne Southward. Moreouer,new and tender Vines would not be proined and cut in haſt:but better it is to expect and tary vntil ſuch time as they be ſtrong ynough and able to beare the cutting bill: meane while,to gather the yong branches together round in maner of on houp or circle.[Where note by the way,That Vines which are erected vpon trees for the moſt part beare later by one yeare than thoſe in Vineyards that be pearched or run on frames.] Some would not haue them to be cut at all, before they haue raught vp to the top of the tree. At the firſt time when you come with the pruning hooke, the head muſt be cut off at ſix foot from the ground,leauing vnderneath one little top twig,which muſt be forced to beare by bending it downward in the head:and in the ſame,when it is thus pruned,there muſt be left behind three buds and no more. The branches which burgen out from thence, ought the next yeare to bee brought vp to the loweſt armes of the tree, and there ſeated: and ſo from yeare to yeare,let them climb vp higher to the vpper boughs,leauing alwaies vpon euery loft or ſcaffold as it were where they reſted,one branch of the old hard wood, and another young imp or twig, for to grow vp and climbe as high as it will. Furthermore, as often as a Vine is pruned afterwards, thoſe branches or boughs thereof in anywiſe muſt bee cut away wnich were bearers the yeare before:and in ſtead of them, the new after they be firſt cleanſed from all the hairy & curled tendrils on euery ſide ſhred off. The ordinarie manner of pruning and dreſſing of vines here about Rome, is to let the tender branches and ſprigs enterlace the boughes, inſomuch, as the whole tree is ouerſpread & clad therwith,like as the very ſame tendrils be alſo couered all ouer with grapes. But the French faſhion is to draw them in a traile along from bough to bough: whereas in Lumbardie and along the cauſey Æmilia [from Plaiſance to Rimino] they vſe to train them vpon forkes and poles:for albeit the Atinian Elmes be planted round about, yet the Vine commeth not neere their greene boughes. Some there be, who for want of ſill and good knowledge about vines,hang them by a ſtrong bond vnder the boughs:but this is to wrong,yea to ſtifle and ſtrangle them outright:whereas indeed a vine,as it ought to be kept down with oiſier twigs,ſo it muſt not bee tied ouer ſtreight. For which cauſe, euen they alſo who otherwiſe haue ſtore & plenty ynough euen to ſpare,of willows & oiſiers, yet chuſe rather to bind vines with ſome more ſoft and gentle matter,to wit,with a certain hearb,which the Sicilians in their language

A language called Ampelodeſmos[i. Vine-bind.] But throughout all Greece they tie their vines with Ruſhes, Cyperus,or Gladon, Reeke, and ſea-graſſe. Ouer and beſides,the maner is otherwhiles to vntie the Vine,and for certain daies together to giue it liberty for to wander looſely, and to ſpred it ſelfe out of order, yea,and to lie at eaſe along the ground, which all the yere beſides:it onely beheld from on high: in which repoſe it ſeemeth to take no ſmall contentment and refreſhing: for like as draught horſes,when they be out of their geeres, and haknies vnſadled,like as Oxen when they haue drawn in the yoke,yea,and greyhounds after they haue run in chaſe,loue to tumble themſelues and wallow vpon the earth: euen ſo the Vine alſo,hauing bin long tied vp and reſtrained,liketh wel now to ſtretch out her limbs and loins, and ſuch eaſement and relaxation doth her much good. Nay,the tree it ſelfe findes ſome comfort and ioy therby,
B in being diſcharged of that burden which it carried continually as it were vpon the ſhoulders, and ſeemeth now to take breath and heart again. And certes, go through the whole courſe and worke of Nature;there is nothing,but by imitation of day and night,deſireth to haue ſome alternatiue eaſe and play dayes between. And it is by experience found very hurtfull,and therefore not allowed of, to prune and cut Vines preſently vpon the Vintage and grape-gathering, whiles they be ſtill wearie and ouertrauelled with bearing their fruit ſo lately: ne yet to binde them,thus pruned,in the ſame place again where they were tied before: for ſurely vines do feel the very prints and marks which the bonds made,and no doubt are vexed and put to pain therewith,and the worſe for them.

The maner of the Gaules in Lumbardy,in training of Vines from tree to tree,is to take two
C boughs or branches of both ſides,and draw them ouer, in caſe the ſtock Vines that beare them be forty foot aſunder: but foure,if they are but twenty foot diſtant. And theſe meet one with another in the ſpace between,and are interlaced,twiſted and tied together. But where they are ſomwhat weake and feeble, they be ſtrengthened with Oiſier twigs or ſuch like rods here and there by the way,vntill they beare out ſtiffe: and look where they be ſo ſhort that they wil not reach out,they are with an hook ſtretched and brought to the next tree that ſtandeth without a Vine coupled thereto.

A Vine branch drawn thus along in a traile, they were wont to cut when it had growne two yeares: for in ſuch Vine-ſtocks as by reaſon of age are charged with wood, it is the better way to giue time & leiſure for to grow and fortifie the ſaid branch that is to paſſe from tree to tree,
D ſo as the thicknes thereof will giue leaue: yea and otherwiſe it is good for the old main bough to feed ſtill and thriue in pulp and carnoſitie, if we purpoſe that it ſhould remaine and carrie a length with it.

Yet is there one maner beſides of planting and maintaining Vines, of a mean or middle nature between couching or interring a branch,by way of propagation,and drawing them thus in a traile from one to another: namely to ſupplant,that is, lay along vpon the ground the whole ſtock or main body of a Vine; which done, to cleaue it with wedges, and ſo to couch in many furrowes or raies,as many parcels thereof, comming all together from one. Now in caſe each one of theſe branches or armes proceeding from one body,be of it ſelfe ſmall,weake and tender,they muſt be ſtrengthned with long rods like ſtaues bound vnto them round about;neither
E ought the ſmall ſprigs and twigs that ſpring out of the ſide, be cut away.

The husbandmen of Novaria reſt not contented with a number of theſe trailed branches, nor with ſtore of boughs and trees to ſuſtaine and beare them, vnleſſe they be ſhored and ſupported alſo with poſts and ouerthwart railes,about which the yong tendrils may creep & wind. No maruell therefore if their wines be after a ſort rough,hard, and vnpleaſant: for beſides the badneſſe of their ſoile,the maner of their husbandry is ſo crooked and vntoward.

Our husbandmen moreouer here about vs,neer vnto the city of Rome,commit the like fault, and find the ſame defect thereupon, in the Varracine Vines, that be pruned but once in two yeres: a piece of husbandry by them practiſed, not for any good that it doth vnto the vine,but becauſe the wine thereof is ſo cheap,that oftner pruning would not quit coſt, neither doth the
F reuenue anſwer the labor and the charges.

In the territorie of Carſeoli(a champion and plain countrey about Rome,the peaſants take a better order,and hold a middle and temperat courſe. For their maner is to proin and cut away from the Vine thoſe parts onely that are faulty and rotten, when they begin once to drie and to wither, leauing all the reſt for to beare Grapes: and thus diſcharging it of the ſuperfluous burden

burden that it caried, they hold opinion, that it is not good to wound it in diuers places: for by this means (say they) it will be nourished and come on very well. But by their leaue, vnlesse the ground be passing rich and fat, Vines thus ouercharged with wood, will for want of pruning degenerate into the bastard wild wines called Labruscæ. G

But to returne againe vnto our plots planted with Trees and Vines coupled together: such grounds when they be plowed require a good deep stitch, although the corn therein sown need it not. Also it is not the manner to disburgen or deffoile altogether such trees, and thereby a great deale of toile and labor is saued: but when the Vines are a pruning, they would be disbranched at once with them, where the boughs grow thickest; and to make a glade onely thorow, the superfluous branches would be cut away, which otherwise might consume the nutriment of the grape. As for the cuts and wounds remaining after such pruning and debranching, we haue already forbidden, that they should stand either against the North or the South. And I think moreouer it were very well, that they did not regard the West where the Sunne setteth: for such wounds will smart, and be long sore, yea, and hardly heale again, if either extreme cold pinch, or extreme heate parch them. H

Furthermore, a Vine hath not the same liberty in a vineyard that it hath vpon a tree: for better means there are, and easier it is to hide the said wounds from the weather flanked as they be within those close sides; than to wryth and wrest them to a mans mind to & fro. In lopping and shredding of trees, when the cut standeth open, there would be no hollow places made like cups, for feare that water should stand therein. Last of all, if a Vine be to climbe Trees that are of any great height, there would be stayes and appuies set to it, wherupon it may take hold, and so by little and little arise and mount vp aloft. I

Chap. XXIIII.

¶ The maner of keeping and preserving Grapes. Also the maladies whereto Trees be subiect.

IT is holden for a rule, That the best Vine-plants which run vpon a frame of rails, ought to be pruned in mid-March about the feast of *Minerua*, called Quinquatrus: and if a man would preserue and keep their grapes, it would be done in the wane of the Moone. Also, that such vines as be cut in the change of the Moon, wil not be subiect to the iniurie and hurt of any noisom vermin. Although in some other respect men are of opinion, that they should be cut in the night, at the full of the Moon, when the signe is in Leo, Scorpio, Sagittarius, and Taurus: and generally it is thought good to set them when the Moon is at the full, or at leastwise when she is croissant. Moreouer, this is to be noted, that in Italy there need not aboue ten men for to look vnto a vineyard of an hundred acres. K

And now that I haue discourſed at large as touching the manner of planting, graffing, and dressing of Trees, I purpose not here to treat again of Date Trees & Tretrisoly, whereof I haue sufficiently written already in the Treatise of strange and forrein Trees: but forasmuch as my meaning is to omit nothing, I will proceed forward to decipher those matters which concerne principally the nature of Trees, and namely their maladies and imperfections, whereto they also as well as beasts and other liuing creatures, are subiect. And to say a truth, what creature is there vnder heauen freed therefrom? And yet some say that wild and sauage trees are in no such danger: only the hail may hurt them in their budding and blooming time. True it is also, that scorched they may be otherwhiles with heate, and bitten with cold black winds, comming late and out of season: for cold weather surely in due time is kindly and good for them, as hath bin said before. But let me not forget my self. See we not many times the cold frost to kill the very Vines? Yes verily: but this is long of the soile and nothing else; for neuer hapneth this accident but in a cold ground. So as this conclusion holdeth still, That in winter time we alwaies find frost and cold weather to do much good: but we neuer allow of a cold and weake ground. Moreouer, it is neuer seen, that the weakest and smallest trees are indangered by frost, but they are the greatest and tallest that feele the smart. And therefore no maruel if in such, the tops being nipped therewith, seem first to fade and wither; by reason that the natiue and radical moisture being bitten and dulled before, was neuer able to reach vp thither. L M

Now concerning the diseases that haunt Trees: some there bee that are common vnto all; others

A others againe, that extend peculiarly to some certaine kind or other. As for the former sort generall it is, that no trees are exempt from the worme, the blasting, and the joint-ach. Hereof it commeth, that we see them more feeble and weake in one part or member than in another, as if they did participate the maladies and miseries of mankind, so common are the names of diseases vnto them both. For certes, we vse to say indifferently, That trees are headlesse, when they be lopt and topt as wel as men who are beheaded: we tearme their eyes to bee enflamed, sendged, and bloud-shotten, when their buds be blasted: & many other infirmities, according to the like proportion: And therupon it is, that we say they be hungerstarued and pined: and contrariwise, that they be full of crudities and raw vndigested humors; namely, when moisture aboundeth in them. Yea, and some of them are said to be grosse and ouerfat, to wit, al such as bear rosin; when

B by the means of too much grease (as it were) they begin to putrifie and turn into Torch-wood; yea, and it falleth out, that they die withall, in case the said grease take once to the roots; euen as liuing creatures being ouergrowne with fat. Moreouer, ye shall see a kind of pestilence light amongst one peculiar kind of trees: like as it fareth sometimes with men in sundrie states and degrees: whereby one while slaues only die of a plague, another while the Commons, and those either artisans in a citie, or peasants and husbandmen of the countrey.

Now as touching the Worme, some trees are more subiect vnto it than others: and to say a truth, in manner al, more or lesse; and that, the birds know well ynough, for with their bills they will job vpon the barke, and by the sound trie whether they be worm eaten or no. But what say we to our gluttons and belly gods in these daies, who make reckoning among their dainty di-

C shes, of wormes breeding in trees; and principally of those great fat ones bred in Okes, which wormes they call Cossi, & are esteemed a most delicat meat? These forsooth they feed in mue, and franke them vp like fat-ware, with good corn-meale. But aboue al others, Pear trees, Apple trees, and Fig trees, are soonest worme-eaten: and if any trees escape, they be such as are of a bitter wood in tast, and odoriferous in smell. Touching those wormes that be found in Fig trees, some are engendred of themselues, and of the very wood: others are bred of a bigger vermine called Ceraستes. How beit, al of them (which way soeuer they come) are shaped in maner of the said Ceraستes, and make a certaine small noise like the shrill and creaking sound of a little criquet. The Seruise-tree likewise is haunted and plagued with little red and hairie wormes, that in the end doe kill it. The Medlar trees also when they be old, are subiect to this maladie.

D As for the misliking of trees [called Sideratio] wherby they consume, wither away, & crumble to powder; it is a thing caused only of the weather and influence of some Planet. And therfore in this ranke are to be raunged Haile, Blasting with some vntoward winds, and frosts that bite and nip them to the heart. And verily it falleth out, that in a mild and warme Spring, when plants bee too forward, and put foorth their soft buds and tender sprouts ouer-soone, the black wind taketh them on a suddaine, and a certaine rime settleth thereupon, sendging and burning the oilers of the Burgeons, whiles they be ful of a milky sap: which accident if it light in blooming time vpon the blossome, is called properly Carbunculus [*i.* a Mieldeaw.] As for the Frost at such a time, it is far worse than the blasting aforesaid, for when it falleth vpon any trees or plants, it there resteth and remains still, it congealeth all into an yce, and no puffe of wind there

E is to remoue and dislodge it: for why? such frosts commonly are not but in time of a stil, cleer, and calm aire. Touching that manner of Blasting or misliking called Sideratio, as if they were smitten with the maligne aspect of some planet, this danger chanceth peculiarly by some drie and hote winds, which are busie commonly about the rising of the Dog star, at what time wee shall see yong trees and newly graffed, to die outright, especially Figge trees and Vines. The Oliue, ouer and besides the worme (whereto it is subiect as wel as the Figge tree) hath another greefe and sorance called in Latin Clavus, Fungus or Patella [*i.* a Knur, Puffe, Meazil or Blister] chuse you whether: and nothing is it but a very sendge or burne by the sunne.

Furthermore, *Cato* saith, That the red Mosse is hurtfull vnto trees. Oftentimes also wee find that as wel Oliues as Vines, take harm by ouermuch fertilitie and fruitfulnes. As for scab and

F skurfe, what tree is cleare of it? The running mange or tettar, is a mischeefe peculiar vnto the Fig tree: as also, to breed certain Hoddy-dods or shell-Snailes sticking hard therto and eating it. And yet these maladies are not indifferent and alike in all parts of the tree. For thus you must think, that some diseases are appropriate to one place more than another. For like as men are troubled with the Arthriticall torments, or the Gout, euen so be trees: yea, and after 2 sorts

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as well as they: for either doth the disease take the way to the feet, that is to say, to the roots, & there breaketh out and sheweth it selfe; or else it runneth to the exterior joynts and fingers, to wit, the smal branches and top twigs, which be farthest remote from the main body of the tree. Hereupon then begin they to drie, wither, and waxe blacke: and verily the Greeks haue proper names and tearms respective to the one infirmity and the other, which we in Latin want. Howbeit we are in some sort able to expresse the Symptomes following thereupon, and namely, when we say, first, That a tree is ill at ease, sicke, and in pain euery where: anon, that it falls away, looks ill, poore, and leane, when wee see the fresh green hew gone, and the branches fraile and brittle: last of all, that it is in a waste, consumption, or feuer hectick, and dieth sensibly, to wit, when it receiueth no nourishment (or not sufficient) to reach vnto al parts, and furnish them accordingly: and the tame Figge tree of al others, is more subject hereunto, as for the wild, they be exempt wholly from all these inconueniences hitherto named. G H

Now as touching the scab or scurfe incident vnto trees, it commeth of certain foggie mists and clammie dewes, which light softly and leisurely after the rising of the Brood-hen star Vergiliæ, for if they be thin and subtile, they drench and wash the trees wel, and do not infect them with the scab: howbeit in case they fall down right, or that there be an ouer great glut of showers and raine, the Fig tree taketh harme another way, namely, by soaking of too much moisture into the root.

Vines, ouer and aboue the Worme and the Blast, haue a disease proper vnto themselues, called Articulatio, which is a certain barrainesse of theirs when they leese their spring in the verie joynt. And this may come vpon three causes: the first, when by vnseasonable and ill weather, as I froſt, heat, haile, or other forcible impressions of the aire, they forgoe their young sprouts: the second (as *Theophrastus* hath well noted) if in pruning of them, the cut stand vpward and open to the weather: the third, when they be hurt by those that haue the dressing of them, for want of skill and taking good heed: for all these wrongs and inconueniences they feele in their joynts or knots. A seuerall kind of blasting or mortification there is besides in vines, after they haue done blooming, which is called Roratio; namely, when either the grapes do fall off, or before they come to their full growth, be baked (as it were) into a thick and hard callositie. It happens also that they be otherwhiles sick, in case after their pruning, their tender oilets or buds be either bitten with the froſt, or sindged with some blast. The same befalleth likewise to them vpon some vntimely or vnseasonable heat: for surely in all things, a certaine measure and moderate K temperature doth well, to bring them to their perfection. To say nothing of the wrong that is done vnto them by the vine-masters themselues and husbandmen as they dresse and trim them, namely, when they bind them ouer-streight, as hath been said before; or when the labourer that diggeth about them, chaunceth to do them one shrewd turne or other by some crooked crosse blow; or else when the ploughman at vnawares doth loosen the root, or glance vpon it with the share, and so disbarke the bodie of it: finally, they haue injurie done vnto them, in case the pruning-hooke bee ouer blunt, and so giue them a bruse. In regard of all these causes, they are lesse able to beare either cold or heat; for euery outward injurie is readie to pierce their fresh galls, and a skald head is soon broken. But the tenderest and weakest of al others, be the Apple trees, and namely, the hastie kind that bringeth sweet Iennitings. Howbeit some trees there be which vpon such feeblenesse and hurt done vnto them, become barren onely, and die not; namely, the Pine and Date tree: for if a man fetch off their heads, you shall see them faile in bearing fruit, L but this hurt will not kill them quite.

Moreouer, it falleth out otherwhiles, that the Apples only or other such fruits, as they hang are diseased, when as the tree aileth nothing; to wit, if in due time they wanted rain, warmth, or winds that were needfull; or contrariwise, if they had too much of euery one: for by such means they either fall from the tree of themselues, or els they are the worse for it, if they proue worth ought at all.

The greatest displeasure that can happen to Vine or Oliue tree, is, when in their very blooming they be pelted with violent showers of raine; for, together with the blossome, down goeth the fruit of them both. From the same cause, proceed the cankerwormes or caterpillars (a most M daungerous and hurtfull kind of vermine to trees) which will eat out the greene bud, knot and all. Others there be that wil denoure the blossome and leaues of Oliues also, as in Miletum: and thus hauing consumed all the greene leaues, leaue the trees bare, naked, and ill-fauored to the eye

A eye. These wormes doe breed in moist and warme weather, and especially if there be thick and foggie mists. Of the same vermine, there is another engendred, namely, if there ensue vpon the former wet season, hotter gleames of the sunne more than ordinarie, which burne the foresaid wormes, and therefore change them into other vermine. Moreouer, there is a fault or imperfection besides, wherto Oliues and Vines especially are subject, and this they cal in Latine Araneus, [*i.* the Spider] when cobwebs (as it were) doe enfold and wrap their fruit, keeping them from growing, and so in time killing them. Ouer and besides, there be certaine winds which findge and burne Oliues and grapes principally, yea and all sorts of fruits whatsoeuer. In some yeres also ye shall see all fruits worm-eaten, and especially Apples, Peares, Medlars, and Pomegranats, without any such hurt and offence to the trees that bear them. As for Oliues, the worm
B sometimes doth them harme, otherwhiles good: for if the worme be engendred and formed before it take the Oliue, it consumes and spoileth the fruit, but in case they breed within the kernel, it causeth the Oliue to thriue the better, by eating the said kernel that drew away and sucked the humor which nourished it. The rain that falleth after the rising of the starre Arcturus, hindereth the generation of wormes, and preserueth fruits from being worme-eaten: and yet if the wind sit Southward in that time when it so raineth, such raines will breed worms in oliues especially, called Drupæ; which beginning but then to ripen, are most readie to fall from the tree. And verily those trees that grow in waterie places or neer riuers, are more subject to haue worme-eaten fruit, which although it fall not so soone, yet it is as loathsome euery way.

Ouer and besides, there is a certaine kind of flie resembling the Gnat, which annoieth some
C trees and their fruits, and namely, Mast and Figs: and it seemeth that this flie is engendred of a certaine sweet humour that lyeth vnder their barkes. Thus much as touching all diseases to speake of, that trouble trees.

As for the impressions of the Aire at certaine seasons, as also of other accidents occasioned by the climat, they are not properly to bee called Maladies, because they kill trees sodainly: as namely, when a tree is blasted outright, or all at once doth wither and drie away: like as when some puffe of an vntoward wind peculiar vnto any region, doth smite them: such as in Apulia they call * Atabulus, and in Eubœa is named Olympias: For if this wind chaunce to blow in mid-winter, it biteth, burneth, and drieth vp trees with such cold blasts, as afterwards no heat of the Sunne is able to recouer againe. In this sort likewise, al trees growing in vallies or standing
D along riuers sides, bee endaungered: and aboue all others, Vines, Oliues and Figge trees. This death that they thus take, is soone after discouered and seene in the budding time when trees begin to put foorth, how soeuer it be later ere the Oliue shew it. Howbeit, a good signe it is in them all of their recouery, when they lose their leaues: for you shall see the leaues tarie on in many of them, and when you think they are past the worst, sodainly die. Otherwhiles also you shall haue the leaues to fade and seeme drie, yet afterwards the same trees to reuive againe, and become greene. Furthermore, in the Northerly regions, as in Pontus and Phrygia, some trees there are that be ordinarily frozen to death; namely, when the froſt and yce continueth after mid-winter fortie daies. And not onely there, but also in other countries, if immediatly after that trees haue put forth their fruit, there follow a hard froſt, they wil die vpon it, although the
E froſt last not many daies.

In a second ranke of causes that may kill trees, are to be ranged the injuries and wrongs that come by mans hand; Pitch, oyle, and grease, are very enemies and hurtfull to them al, but especially to young trees. Againe, if trees be barked round about, they will die all, vnlesse it be the Corke tree; for it will thriue and prosper the better, if it be in that wise discharged of the outward barke, for growing as it doth ouer thicke, it claspeth and clingeth to the tree so hard, that it choketh and strangleth it again. Neither doth the tree Adrachne find any hurt or offence by disbarking, vnlesse the very wood be cut also together with it. As for cherie trees, Lindens, and Vines, it is ordinarie with them to cast ther barke in some fort, and take no harme thereby; but it is not the vitall and liuely inner barke indeed which is next vnto the bodie, but that onely
F which by comming of another vnderneath fresh and young, is driuen forth and thrust out.

Some trees there be, which naturally haue their barke full of chaps and rifts, as the Planes for example. As for the Line or Linden tree, if it chance to leese the barke, it will come in manner whole and entire againe. In such therefore the manner is, by way of cure to close vp againe with clay and dung, the naked and bare place, and so to bring it to a cicatrize: and, I assure you,

* *quaſi aëtiũ Boream, i. calaſ mitatem, aut peſtem inferens*

this practise somtimes speeds well, and doth the deed; prouided alwaies, that the naked place were not surprised before the cure, with extremity either of cold or heat. Certaine it is, that by this means both kinds of the Oke, as wel the Robur as the Quercus, liue the longer, and die nothing so soone as otherwise they would. And herein the time of the yeare ought to be considered, when a tree is thus pilled and disbarked: for in case that a man pill the barke of the Firre or Pine tree, during those months wherein the sunne passeth thorough the signes of Taurus or Gemini, which is the very season of their budding, there is no way but one with them, for presently they die: but if this wrong should befall them in winter, they would abide it the better and longer liue, than being so misused either in Aprill or May. The same is the case of the mast-Holme, the wild Robur also, and the common Oke. Howbeit, take this note by the way, that if the void place where the tree hath beene barked round about, be but narrow, so as the brims of the barke remaining be not farre asunder, the trees aforesaid will take no harme at all thereby. Mary in the tenderer sort, and such as a man may say are but of a weake complexion, and growing besides in a leane and hungrie ground, if the barke be taken away but of one side and no more, it is enough to kill them.

The like may be said of the topping or beheading the Cypresse, the Pitch tree, and the Cedar: for let these haue their heads either cut off with an axe, or burnt by fire, they will die, there is no remedie. As much also is to be said, when beasts doe browse and eat them. As for the Oliue tree, if a Goat chance but to licke thereof, it will thereupon proue barraine and beare no more Oliues; so saith *Varro*, as we haue noted heretofore, But as some trees vpon the like injury done vnto them, will die, so others againe will be but the worse for it, and such are the Almond trees: for where before they did beare sweet Almonds, they will euer after bring bitter. Moreouer, you shall haue some trees, that wil thriue & do the better after this hard dealing, & namely a kind of peare tree called Phocis, in the Iland Chios: for you haue heard by me already, which trees they be that lopping and shredding is good for.

Most trees, and in manner all (except the Vine, Apple tree, Fig tree, and Pomegranate tree) will die, if their stocke or bodie be clouen: and some be so tender, that vpon euery little wound or race that is giuen them, yee shall see them to die: howbeit, the Figge tree and generally all such trees as breed Rosin, defie all such wrongs and injuries, and will abide any wound or bruse whatsoeuer.

That trees should die when their roots are cut away, it is no maruell: and yet many there bee of them, that wi liue and prosper well neuertheless, in case they be not all cut off, nor the greatest master roots, ne yet any of the heart or vitall roots among the rest.

Moreouer, it is often seene, that trees kill one another when they grow too thicke; and that either by ouershadowing, or else by robbing one another of their food and nourishment. The Iuie also, that with clipping and clasping bindeth trees too hard, hasteneth their death. Misselto likewise doth them no good; no more than Cytisus, or the hearbe Auro, which the Greekes name Alimus, growing about them. The nature of some plants is, not to kill and destroy trees out of hand, but to hurt and offend them only, either with their smell, or else with the mixture and intermingling of their owne iuice with their sap. Thus the Radish and the Lawrell doe harme to the Vine if they grow neare vnto it: for surely the Vine is thought to haue the sense of smelling, and wonderfully to sent any odours: and therefore it is obserued in her by experience, That if shee be neare vnto Radish or Lawrell, shee will turne away and withdraw her selfe backeward from them, as if shee could not abide their strong breath, but vtterly abhorred it as her very enemie. And vpon the obseruation of this secret in Nature, *Androcides* the Physitian deuised a medicine against drunkennesse, and prescribed his patients to eat Radish if they would not be ouercome with wine. Neither can the Vine away with Coleworts or the Cabbage, nay it hateth generally all worts or pot-herbs: it abhorreth also the Hazell and Filberd tree; in such sort, as a man shal sensibly perceiue it to looke heauily and mislike, if those plants aforesaid grow not farther off from it. And now to conclude and knit vp this discourse, would you kill a Vine out of hand? lay to the root thereof nitre or salt-petre, and alumne, drench it with hote sea-water: or doe but apply vnto it Bean cods, or the shales or husks of the pulse Eruile, and you shall soone see the operation and effect of a most ranke and deadly poison.

CHAP.

CHAP. XXV.

¶ Of many and sundry prodigies or strange tokens and accidents about trees. Also of an Oliue plot which in times past was transported all and whole, from one side of an high port way, to another.

IN this Treatise of the faults and imperfections incident to Trees, me thinks I should do wel to say somwhat of the supernatural occurrences in them obserued: for we haue known some of them to grow vp and prosper without any leaues at all. And as there haue bin Vines and Pomegranats seen to beare fruit, springing immediately from the trunke, and not from branch or boughs: so there haue bin vines charged with grapes, and not clad with leaues: and Oliues likewise had their berries hanging vpon them whole and sound, notwithstanding all their leaues were shed and gon.

Moreouer, strange wonders and miracles haue hapned about trees by meere chance and fortune: for there was an Oliue once, which being burnt to the very stump, reuiued & came again: and in Bœotia, certain Fig Trees, notwithstanding they were eaten and gnawn most piteously with Locusts, yet budded anew, and put forth a fresh spring. Also it hath bin marked, that trees haue changed their colour from black to white. And yet this is not alwayes a monstrous thing beyond naturall reason, and specially in such as come of seed, as wee may obserue in the Aspe, which eftsoones turneth to be a Poplar. Some are of opinion, That the Service Tree if it bee transplanted, and come into a hoter ground than is agreeable to the nature thereof, will leaue bearing, and be barren. But it is taken for no lesse than a monster out of kind, that sweet Apples and such like fruits should proue sowre, or sowre fruit turne to be sweet; as also that a wilde Fig Tree should become tame, or contrariwise. And it is counted for an vnluckie sign, if any Tree change from the better to the worse; to wit, if a gentle garden Oliue degenerate into the wilde and sauage: if a Vine that was wont to beare white grapes, haue now black vpon it: and so likewise if a Fig Tree which vsed to haue white Figs, chaunce afterwards to beare black. And here by the way I canot forget the strange accident that befell in Laodicea, where vpon the arriuall of King *Xerxes*, a Plane tree was turned into an Oliue. But if any man be desirous to know more of these and such like miracles, for as much as I loue not to runne on still and make no end, I refer him ouer to *Aristander* a Greek writer, who hath compiled a whole volume, and stuffed it full of such like wonders: let him haue recourse also to *C. Epidius*, a Countryman of ours, whose Commentaries are full of such stuffe: where he shall find also, that trees sometimes spake.

A little before the ciuil war brake out between *Iulius Cæsar* and *Pompey* the Great, there was reported an ominous and fearfull sight presaging no good, from out of the territory of Cumes, namely, That a great Tree there sunke down into the earth so deep, that a very little of the top boughs was to be seen. Hereupon were the propheticall books of *Sibylla* perused, wherin it was found, that this prodegie portended some great carnage of men; and that the neerer that this slaughter and execution should be to Rome, the greater should the bloud shed be.

A prodigious signe and wonder it is reputed also, when trees seem to grow in places where they were not wont to be, and which are not agreeable to their natures; as namely on the chapters of pillars, the heads of statues, or vpon altars: like as to see one tree of a diuers and contrary kinde growing vpon the top of another; as it befell about the city Cyzicum hard before the streit siege that was laid vnto it [by *Mithridates*] both by sea and land, where a Fig tree was seen to grow vpon a Lawrel. Likewise at Tralleis, about the time of the foresaid ciuill war, a Date tree grew out of the base or foot of a Columne that *Cæsar* Dictator caused there to be erected. Semblably at Rome also, twice during the war between the Romans and K. *Perseus*, there was a Date tree known to grow * vpon the lanterne or top of the Capitoll temple, foreshewing those victories and triumphs which afterward ensued, to the great honor of the people of Rome. And when this was by stormes and tempests ouerthrowne and laid along, there sprung vp of it selfe in the very same place a Fig tree, at what time as *M. Messala* and *Caius Cassius* the two Censors, held their Quinquennall solemne sacrifices for the assoiling and purging of the city of Rome. From which time *Piso* (a renowmed Historiographer and Writer of good credit) hath noted, that the Romans were giuen ouer to voluptuousnesse and sensuality, and that euer since all chastitie

* Or as some read, the head of *Iupiter* within the Capitol.

stitie and honest life hath bin exiled. But aboue all the prodigies that were euer seen or heard, G there is one that passeth, and the same hapned in our age, about the very time that *Nero* the emperor came to his vnhappy end and fall: for in the Marrucine territorie there was an oliue garden belonging to *Vectius Marcellus* a right worshipfull knight of Rome, which of it selfe remoued all and whole as it stood, ouer the broad highway, to a place where lay tillage and earable ground: and the corn lands by way of exchange crossed ouer the said causey againe, and were found in lieu of the Oliue plot or hortyard aforesaid.

Chap. XXVI.

¶ *The remedies for the maladies and diseases of Trees.* H

NOw that I haue declared the diseases of Trees, meet it is that I should set down the cure and remedies thereto. Where this one thing would be first noted, That of Remedies, some be common to all trees, others appropriate to certain. Common be these following, To bare and clense the roots, to hil and bank them again; that is to say, to giue aire vnto the roots, & let the wind into them: and contrariwise to couer them, & keep both wind & weather from them: to water them, or to deriue & diuert water from them: to refresh their roots with the fat liquor of dung: to discharge them of their burden by pruning their superfluous branches. *Item*, to giue their humors issue, and as it were by way of phlebotomie to let them bloud, and to skice and scrape their bark round about, in maner of scarification. To take downe their I strength and keep them vnder that they be not too lusty & proud. Also, if the cold hath caught their buds or burgeons, & therby caused them to look burnt, rough, and vnpleasant; to slick, polish, & smooth them again with the pumy stone. These verily be the diuers helps to cure trees: howbeit, vsed they must be with great discretion, for that which is very good for one, is not so good for another: and some trees require this course, others that, to be taken with them. As for example, the Cypres tree canot abide either to be dunged or watered, it hateth all digging and deluing about it, it may not away with cutting and pruning, it is the worse for all good physick, nay all remedies to others are mischiefs to it, and in one word, go about to medicine it you kil it. All Vines, and Pomegranat trees especially, loue a life riuer sides, & desire to be watered, for thereby will they thriue and prosper. The Fig tree also it selfe is nourished and fed in waterie grounds: but the fruit that it beareth is the poorer by that means. Almond trees if they be plied K with digging, will either not bloome at all, or else shed their floures before due time. Neither must any yong plants or trees newly grafted, be digged about their roots, before they haue gathered sufficient strength, and begin to beare fruit. Most trees are willing enough to be disburdened of their superfluous and ouer-rank branches, like as we men can spare our nails to be pared, and bush of hair to be cut, when they be ouergrowne. As for old trees, they would be cut down hard to the ground, for vsually they rise again of some shoot springing from the root, and yet not all of them. Regard therefore must be had, that none be so vsed but such (as we haue noted before) as are able of nature to abide it. For trees to be watered at the roots in the heate of summer, it is good, but in winter it is as bad. In the fal of the leaf it may be wholsom, it may also be hurtfull, and therefore the nature of the soile would be considered: for the grape-gatherer in Spain meeteth with a good vintage, notwithstanding the Vines stand in a marish and fennie ground; howbeit in most parts of the world besides, it is thought good husbandry, to draine L away from the roots the very rain water that falls from aboue in Autumne. About the rising of the Dog-star, trees desire most of all to be wel watered; and yet they would not haue too much thereof euen in that time, for in case their roots be ouer-drenched and drowned therewith, they will catch harm. Herein also the age of trees is to be respected, which in this case prescribeth what is meet and sufficient: for yong trees be lesse thirsty than others: also Custome is a great matter. For such as haue beene vsed vnto watering must not change their old woont, but they require most of all others to be vsed so still. Contrariwise, Those Trees which grow vpon dry grounds naturally, desire no more moisture than that which is needful. In the territory about M Sulmo in Italy, and namely within the Liberties of Fabianum, the Vines which doe beare the harder and sowrer Grapes, must of necessitie be watered. And no maruaile, for the verie lands and Corne-fields vse to haue water let in vnto them. And here a wonderfull thing is to be obserued; This water cherisheth the Corne, but killeth all the hurtfull Grasse among: and the

A the riuer ouerflowing the lands, is as good as a weeding. In the same countrey the maner is in midwinter to open a sluce or draw vp their floodgates, for to ouerflow their vine roots with the riuer: and so much the rather, if either it be an hard frost, or snow lie vpon the ground: And why so? because the pinching cold should not burne them: and this they call there by the name of Tepidare, [*i.* to giue them a kindly warmth as in a stouve:] see the memorable nature of this only riuer, to be warme in winter; and yet the same in summer is so cold, that hardly a man can endure his hand in it.

Chap. XXVII.

¶ *Of caprification or scarifying trees: also the maner of dunging them.*

B TOuching the remedies for blasting as well by heat as cold, I will treat in the booke next following. Meane while I cannot omit one manner of cure by way of Scarification. For when the bark is poore and lean, by reason of some disease or mislike, so as it clengs together, pressing and binding the quick wood ouermuch, wherby the tree is as it were hide-bound, they vse to slit the same along with a very sharpe cutting hooke, guiding and gaping the edge thereof with both hands, that it goe not ouer-deep: and so by these incisions they doe open it, and as it were losen and enlarge the skin. Now, when this feat is wrought, the onely signe that it is wel don and good for the tree, is this, if the incisions in tract of time appeare wide, and the void place incarnate again and fill vp with a kind of callous substance, compounded of the sap, and wood together growing betweene. Whereby it appeareth, that in many cases the cure of C mens maladies & the diseases of trees is very like: for that euen their bones also vse to bee trepanized and bored through as well as ours. Also for to make sweet almonds of bitter, first the tree must be digged round about, and then boared thorough with an augoer toward the root or butt end, whereby the waterish humor that runneth downward, may issue forth and passe away. Moreouer, if a man would discharge Elmes of their superfluous moisture, they must be pierced with a wimble, a little aboue the ground, as far as to the very heart or pith; if either they be old, or be perceiued to receiue ouermuch nutriment. In like maner the same excessiue humor is let out of Fig trees by meanes of certaine light slits or gashes made in the barke, aslant or byas, in case it seeme to swell and be ouer-streight, and by this deuise they preuent the falling of their fruit.

D Generally, what trees soeuer bearing Apples or such like soft fruit without, if they chaunce at any time to proue barren, that is to say, to put foorth leafe only without any fruit, the vse is, first to make a clift in the root; then, to put a stone therin, that the edges meet not and rejoin againe; and so they become fruitfull. The same is practised in Almond trees also, but in steed of the stone there must be a wedge of Oken wood driuen in. As for Pyrries and Medlar trees, those wedges must be made of Pine Torch-wood. Moreouer, if either vines or fig trees, be ouer ranke of wood, it is very good to cut and skice the roots round about, and when they bee thus serued, to couer with ashes the said incisions: but then they must bee close couered with ashes and earth aloft. If ye would haue trees beare Figs at the later end of the yere, pluck off the first green figs so soon as they be somwhat bigger than Beans: for vnder them there wil other come E vp in the place, and be later ere they wax ripe. The same fig trees when they begin to spring leaf and look green, if the top-twigs of euery bough be cut off, becom the stronger & more fruitfull by it. For as touching the ripening of Figges by Caprification, true it is, that there be certain flies like gnats engender in greene figs, which are the occasion thereof, for when they are flown out, there are no graines or seeds found within: whereby it is euident, that they be turned into those flies. And when they do fly forth, so hasty they are to be gone, that many of them as they breake out, leaue either a foot or a wing behind them. Besides, another kind there is of gnats, which they call Centtinæ, for sloth and shrewdnesse like in al the world to Drone-bees, so mischeeuous they be to the good flies or gnats indeed, that cause the Figs to ripen: for, them they kill, and die themselues when they haue done. Moreouer, there be certaine wormes like moths F that ordinarily do much hurt to the graines or seeds within figs, and eat them quite: The only remedie against this vermine, it is to take a twig or imp of the Italian Lentisk tree, and to set or couch it with the wrong or top end downeward, in the very same trench were the fig tree was planted. For to haue fig trees bear most plentifully, take ruddle or red-earth tempered wel with the lees or grounds of oile, after that the same is mixed with dung, poure it to the roots of the

trees when they begin to put forth leaues. Among wild Fig trees, the best be the black & those G
that grow in stonie grounds: for their Figges are fullest of cornes or graines within. And as for caprification, it would be practised after rain. And take this for a generall rule, That ye beware in any hand in curing of trees, least yee vse a mischeefe for a remedie, a thing that commonly happeneth by ouer many medicines, or the same not applied in due season: for as it is very good for trees, to cut and lop off their boughs where they grow too thicke: so to be hacking and mangling of them euery yeare, hurteth them as much. As for the vine, it requireth pruning once a yeare: but the Myrtle-trees, Pomegranate, and Oliue trees, euery two yeares; because they will quickly spring againe and shoot forth branches thicke. Other trees would not be lopped so often. Neither is it good to cut or prune any whatsoeuer it be, at the fal of the leafe. Nay, they are not so much as to be scraped, but in the pruning time, that is, in the Spring. All wounding of H
trees goes to the very heart, and hurt the quick, vnlesse it be of those parts that are superfluous.

As great consideration there would be had in the manner of mucking them. No doubt, they loue dung well: but carefull heed would be taken first, that none be laid to the roots in the hotest season of the yeare. *Item*, That it be not greene, but thoroughly rotten: lastly, that it bee not ouer ranke nor stronger than is needfull. Swines dung burnes the root of vines, vnlesse it bee fiue yeares old, or the vines stand in some place where water is at commaundement for to coole the excessiue heat thereof. Also the filth of Tanners oose and Curriers scrapings doe the like, if they be not well delaied with water. Likewise it must not be laid too thicke. The ordinarie proportion is thought to be for euery ten foot square, three Modij of dung. But herein no certaintie can be set downe: for the nature of the soile must rule all. With Swines and Pigeons I
dung, they vse to soulder the cuts and wounds that are giuen to trees. In case the Pomegranats grow to bee tart and soure, the manner is to dig about the root and lay it bare, and then to put Hogs dung therto: for that yeare the Pomgranats will be full of a wine juice; and the next yeare following proue sweet. Some good husbandmen there be, that think it meet and requisit foure times a yere to water their roots with mans vrine and shere water together, and vpon euery one they bestow a whole Amphore. Or else to bedeaw and sprincle the top branches of the Pomegranat trees with wine, wherein Laser hath beene steeped. When the pomegranat doth cleaue & open vpon the tree, it is good to wreath the steal therof. If Figs doe the like, there would be oile lees cast vpon them. Other trees when they are amisse or doe miscarry, ought to be drenched with wine lees: and Lupines if they be set about their roots, will helpe them. The water also or K
decoction wherein Lupines were sodden, poured about the roots of Apple trees or such like, doth them much good. If it happen to thunder about the feast Vulcanalia, Figs will fall from the tree. The remedy thereof is to strow the plots before with Barley straw. Would you haue hastie Cherries? Lay lime to the roots of the tree, it will cause them to ripen their fruit speedily. Of al fruits these hastie Cherries would be plucked and gathered as they ripen, to the end that those which be left behind, may thriue and grow big and faire.

Chap. XXVIII.

¶ *Many and sundrie medicines seruing for trees, to wit, remedies against venomous vermine and Pismires, likewise against all hurtfull beasts.* L

Some trees there be which are the better for wrong and injurie done vnto them: yea, and if they be pinched or bitten, they shoot vp the rather, as Date trees and the Lentisks, for euen the very salt water nourisheth them. And true it is, that ashes hath the like nature and vertue that salt, howbeit, more mild and gentle. Hereupon it comes also, that Fig trees vse to bee strewed therewith, yea, and to be wet with the juice of Rue, to the end, that neither their fruit should proue worm-eaten, nor their roots putrifie and rot. Moreouer, if vines be too full of moisture and apt to bleed ouermuch, it is an ordinary thing to pour salt water to their roots. Also, in case their grapes be apt to fall, folk vse to take ashes and besprincle them with vinegre, and so to besmear the roots therwith: or els with red Orpiment, in case the grapes be giuen to putri- M
faction. Say that vines be barren and will not bear grapes, their roots ought to be wel drenched and dawbed with sharp vinegre and ashes incorporat together. But what if a vine bring not her fruit to ful maturity, before it begin to wax drie and to wither? the superfluous wood ought to be cut away about the root, and the cuts together with the small strings or beard of the root to bee

A be wet and soked in sharp vineger, and stale chamber-lee, and then they should be well couered and stopped with a kind of mortar made therewith, and often digged about. As for Oliues, if they make shew of smal increase, their roots must be bared and laid open to the cold in winter; for by this manner of chastisement they will amend and do far better.

In all these remedies, proceed we must according to the course of the yere: for sometime the season requireth, that the meanes should bee sooner vsed, and otherwhiles later. Some plants there be that fire is good for, and namely, canes and reeds: for if they be burnt, they will come vp again the thicker and more smooth. As for *Cato*, hee hath certain compound medicines for trees, distinct by sundry measures by him prescribed: for he hath ordained to the roots of the greater trees an * Amphore, but of the lesse an * Vrna only, of Oile dregs, with an equall quan- * *Amphora, or Quadrans*, was a measure Romane of liquor, containing 16 *Congij*, which is about 16 wine gallons.
B tity of water: all which being tempered together, he would haue to be poured by little & little to the roots, but they ought before to be digged about and laid bare. And for the Oliue, he adeth moreouer, that the roots should haue a bed of litter or straw made before, and then vsed accordingly. In like manner also would the fig tree be serued: but especially at the roots of it there should be raised a bank of old earth; for by that means it wil come to passe, that the green figs will not fall, they will beare more plenteously, and the fruit be more smooth and pleasant. To preuent in like maner, that the worme * Convolvulus bred not in a vine, hee appointed two gallons of oile dregs or lees, to be boiled first to the thicke consistence of hony, and then afterwards to take a third part of the slime Bitumen, and a fourth part of brimstone, and seeth all together again in the open aire; for within dores there would be some danger of setting the house
C a fire. With this mixture, if a vine be well annointed about the ioints, and vnder their hollow arm-pits, he assureth vs, that there will no such worme breed therein. Some content themselues to perfume vines onely with the smoke of this composition, so as it be done on the winde-side, that it may carry the fume directly to them; and this should be continued for three daies together. Many are of opinion, that wine being mingled with like quantity of water (because alone of it selfe it is hurtfull) is as good for this purpose as the oile dregs abouesaid, which *Cato* hath prescribed. Another kind of vermin or worme there is, that gnaweth the tender buds or burgeons of the vine, and the same is called Volvox: to preserue vines from this harmefull creature, men are wont to take their vine-hooks when they be newly ground and sharpned, then to scoure them with a Beauers skin, and with them to prune the vines: or else after they be pruned, to an-
D noint them with bears bloud. Moreouer, Ants or Pismires make foule work otherwhile among trees. If you would driue them away, daub the stock or butt end with red Sinopre and Tar tempered together. Or do but hang vp any fish neere by, and all the Pismires wil leaue their former haunt, and gather about it. Others make no more adoe, but stampe Lupines with oile, and therwith annoint the roots. Many there are, who kill both them and Mouldwarps with oile dregs. Also, against Palmer-worms or Caterpillars, and to keepe Apples from rotting, they giue order for to annoint the top twigs and branch ends of trees with the gal of a green Lizard. But more particularly against the said caterpillars, they would haue a woman whiles her monthly sicknes is vpon her, to go round about euery tree by it selfe, barefooted and barelegged, vnbraced and vnlaced, and her haire hanging about her eares. Moreouer, to preserue trees from wilde and noi-
E some beasts, that none of them come neare to bruise and marre their green spring, they doe appoint to besprent their leaues with greene Cow or Oxe shearne, and water together, betweene some showers, that the rain may wash away the malice and hurtfull quality of the medicine. A wonder to see how inuentiue men are to deuise remedies for euery mischiefe; for many you shal haue, who be verily persuaded, that there are certain charms & inchantments to driue away the haile. But for mine own part, I thinke it meere mockery to set downe the very words, although *Cato* hath done it before me. Who also speaketh of another spell for dislocations or members out of ioint (an accident happening to trees) which he would haue to be ioined close within the clift of canes. The same writer hath permitted men to cut down sacred groues, trees also dedicated for religion and sequestred from profane vse (after a solemne sacrifice to the gods first
F performed:) the reason and manner whereof he hath put downe in a certaine treatise, which hee compiled of purpose as touching that argument.

* *Vrna*, is halfe *Amphora*, to wit, 8 gallons, or thereabouts.
* Vine fretter, or the Diuels gold-ring.

THE

THE EIGHTHTEENTH BOOKE OF THE HISTORIE OF NATVRE,

WRITTEN BY C. PLINIVS SECVNDVS.

CHAP. I.

¶ *Of the exceeding loue and affection of our anceſtors in old time to Agriculture and Husbandrie. Alſo, of their ſingular paines and diligence about Gardens.*

NOw followeth the treatiſe of corn, of Gardens, and Floures, and generally of al things elſe, that by the goodneſſe of Nature the Earth bringeth forth bountifully, beſides Trees and Shrubs. The ſpeculation whereof verily is infinit, if a man do but conſider the number and variety of Herbes and Floures, together with their odors and colors; the diuerſity alſo of their iuices, their feuerall vertues and properties, whether it be to cure men of their maladies, or to giue them pleaſure and contentment to their ſenſes. But before that I enter into this diſcourſe, very willing I am to take in hand the cauſe of Earth (the common mother of vs all) and to aſſiſt her againſt all ſlanderous imputations, notwithſtanding I haue in the beginning of this my worke pleaded once already in her defence. For when we looke into the matter within her contained, we are ſet on fire inwardly to find fault with her for breeding and bearing noiſome things, charging vpon her our own faults, and imputing to her that, for which we of right ought to be blamed. Set caſe ſhe hath brought forth poiſon and venom, Who hath ſearched them out but man? As for the fouls of the aire and wild beaſts, it is ſufficient that they touch them not, nay they know how to beware and auoid them. For ſay that the Elephants doe file their teeth ſharp againſt hard trees, ſay that the Rhinocerotes whet their horns againſt the rockes, and the wild Bores ſharpen their edge tuskes againſt both ſtocke and ſtone: ſay that all creatures know well enough how to prepare and frubbiſh their weapons to do miſchiefe, which of them all yet infect them with poiſon, but man alone? we haue the caſt to envenome and poiſon arrowes; we can tell how to put ſomthing to our darts of yron and ſteele, more hurtfull and miſchieuous than they be. It is ordinary with vs to poiſon riuers alſo; yea & the very Elements whereof the world doth ſtand, are by vs infected: for euen the aire it ſelfe, wherein and whereby al things ſhould liue, we corrupt to their miſchiefe and deſtruction. Neither can we truly ſay or think, that other creatures beſides vs are ignorant of theſe poiſons; for we haue already ſhewed, that they are not to ſeeke either what defenſatiues to prouide againſt they ſhould fight with ſerpents, or what remedies to find for their cure after they haue fought and are hurt. Moreouer, ſetting man aſide, there is no creature furniſhed or armed with any other venome, but their own. We cannot chuſe therefore but confeſſe our great fault and deadly malice, in that we reſt not contented with naturall poiſons, but betake our ſelues to many mixtures and compoſitions artificiall, made euen with our owne hands. But what ſay you to this? Are not ſome men themſelues meere poiſons by nature? for theſe ſlanderers and backbiters in the world, what doe they elſe but lance poiſon out of their black tongues, like hideous ſerpents? what doe theſe enuious perſons, but with their malicious and poiſonfull breath ſindge and burne all before them that they can reach or meet with, finding fault with euery thing whatſoeuer? Are they not well and fitly compared to theſe curſed fouls flying in the dark, which albeit they ſequeſter themſelues from

A from birds of the day, yet they bewray their ſpight and enuy euen to the night and the quiet repoſe thereof, by their heauie grones (the only voice that they vtter) diſquieting and troubling thoſe that be at reſt: & finally, all one they be with thoſe vnluckie creatures, which if they happen either to meet or croſſe the way vpon a man, preſage alwaies ſome il toward, oppoſing themſelues (as it were) to all goodneſſe, and hindering whatſoeuer is profitable for this life. Neither do theſe monſtrous and abominable ſprites know any other reward of this their deadly breath, their curſed and deteſtable malice, but to hate and abhor all things. Howbeit, herein may wee acknowledge and ſee the wonderfull majeſtie of dame Nature: for like as ſhe hath ſhewed her ſelfe more fruitfull and liberall in bringing forth profitable and holeſome plants, in greater plenty than hurtfull and noiſom; ſo ſurely hath ſhe furniſhed the world better with good men
B and vertuous for the weale publick. In which regard and conſideration, we alſo taking no ſmall joy and contentment (leauing theſe troubleſome ſpirits to themſelues for to broile and frie in their owne greace) will go on forward and proceed to declare the reſt of Natures workes; and with the better reſolution, for that wee ſeeke more pleaſure and contentment in the paines and trauell that we take, than expect any fame or bruit of men afterwards. For why? we are in hand to ſpeake of the countrey and countrie commodities, ſuch as in old time like as they were moſt neceſſary for this life, ſo they were accounted and honoured moſt highly.

CHAP. II.

¶ *Of the firſt guirland or chaplet made of herbes and floures at Rome.*

C THe firſt order that K. *Romulus* inſtituted in Rome city newly built, was the guild or fraternitie of certaine Prieſts or Wardens ouer corn fields, which were in number twelue. And for to do the greater honour to this company, he cauſed himſelfe to be called the twelfth brother among them: and *Acca Laurentia*, the nource or foſter-mother of this Prince, beſtowed vpon him a garland of corn eares, twiſted and tied together with a white ribband, as the moſt facred badge and enſigne of this new Prieſthood, which he and his brethren ſhould weare with great reuerence and deuotion: and this was the very firſt chaplet known at Rome. Now the honor of this ornament was perpetuall, and continued for terme of life; ſo as a man once inueſted therein, could not be degraded and depriued thereof; though hee were baniſhed or taken priſo-
D ner; it accompanied him euer to his dying day. Then, and in thoſe daies, euery man within the whole body of the people of Rome, contented himſelfe with two acres of land, and King *Romulus* aſſigned to none of his ſubiects a greater proportion: whereas now ye ſhall haue thoſe that erewhile were but ſlaues and ſeruants vnder the emperor *Nero* (deſpiſing as not ſufficient, green encloſures and gardens of that compaſſe) muſt haue fiſh-pooles alſo bigger than ſo: and well it were if they would ſtay there and go no further, for ſhortly we ſhall ſee ſome one or other of them, neuer reſt vntill he haue kitchins alſo more than two acres wide. And thus much for king *Romulus*.

King *Numa* his ſucceſſor, ordained to worſhip the gods with an oblation of corne, yea and to offer prayers and ſupplications vnto them by no other means, than cakes made of ſalt and meal: yea and as *Hemina* mine author ſaith, for to induce the people of Rome the better vnto it, he al-
E lowed them to parch their corne in their ſacrifices; for that corne thus partched, was ſuppoſed to be a more wholſome food: by which meanes, this one thing inſued in the end, that no corne was counted pure and good, nor fit to be vſed in diuine ſeruice, but that which was thus baked or partched. He alſo inſtituted the feaſt Fornacalia; to wit, certaine holy-daies for the parching and baking of corne: as alſo another as religiouſly obſerued, called Terminalia; namely, for the bounds and limits of lands: for theſe and ſuch like gods, as then, they worſhipped moſt: as alſo the goddeſſe *Seia*, ſo called *aſerendo*: [*i.* of ſowing corne and ſetting plants:] and *Segeſta*, which
* *Tertiam, to wit, Tutelina; for preſeruing of trees planted, and corne ſowne: or as ſome reade (Tertium) meaning Terminum.*
name they gaue her *a ſegetibus*, [*i.* of corn fields:] whoſe images we at this day do ſee in the grand
F Cirque or Shew-place at Rome. A * third goddeſſe there is among them, whom to name and inuocate within-houſe, they might not with ſafe conſcience. Laſtly, ſo religious and ceremonious they were in old time, that they would not ſo much as taſte of new corne or wine, before the Prieſts had taken a ſey of the firſt fruits.

CHAP.

Chap. III.

¶ *Of Iugerum, and Actus. Of the antient Lawes ordained for Cattell in old time. How often and at what time Corne and victuals were exceeding cheape at Rome. What noble and famous persons addicted themselues wholly to Husbandrie and Tillage.*

AN Acre or Arpen of ground, called in Latine Iugerum, was as much as might be eared vp or ploughed in one day with a yoke of Oxen. And Actus in Latine is a Land, or so much just as two Oxen are driuen and occupied in, whiles they plough in one tract without any rest. This contained by the old time, 120 foot in length: and being doubled in length, made the Acre or Iugerum abouesaid.

In antient time of the old Romans, the greatest Present that could be giuen to captains and souldiers who had borne themselues valiantly in the seruice of their countrey, was as much ground as they could haue eared or broken vp in one day. And it was thought a great reward to receiue at the hands of the people of Rome halfe a pint (or a pint at the vtmost) of corn. Moreouer, in so great request was corn and Husbandry, that the first and chiefe houses in Rome, took their surnames from thence: and namely, the *Pilumni*, who deuised first the pestill to bray corne withall in their mils and backhouses: also, the family of the *Pisones*, who tooke their name, *a pisendo*, [*i.* of stamping or pounding corne in a mortar.] The *Fabij* in like manner, the *Lentuli*, and the *Ciceroes*, each one according to the seuerall pulse that they skilled best to set or sow. Moreouer, to the house of the *Iunij*, they gaue the surname of *Bubulcus*, by occasion of one of their ancestors, who knew passing well how to vse and order oxen. Ouer & besides all this, that you may know what regard was had of corn, among other sacred and holy ceremonies, there was nothing reputed more religious than the bond of Confarration, in knitting vp of mariages, & assurance making of the chiefe priests: yea, the manner of the new wedded brides was to carry openly before them a wheaten cake. In times past, the Magistrates called Censors, iudged it a trespasse worthy of great rebuke, to be an ill husband; that is to say, to be careleslesse and negligent in tilling the ground. And as *Cato* reporteth, if men called one by the name of a good husbandman, they were thought to haue praised & commended him in the highest degree: hereupon also it came, that rich and substantiall men were termed in Latine, Locupletes, as one would say, Loci-pleni, [*i.* wel landed.] And as for the very word Pecunia in Latine, which signifieth money, it took the name of Pecus, (*i.*) cattell. And euen at this day (as appeareth in the Registers of the Censors, and the accounts of the city Chamber) all their rents, reuenues, and customes growing vnto the people of Rome, are called Pascua; for that a long time the whole domaine of Rome, stood vpon pasturage and nothing els. The penalties and fines also, which offendants were put to pay, were raised of nothing else but of Kine, Oxen, and Sheep: where, by the way, I cannot conceale from you the fauorable regard that the antient lawes and ordinances of Rome had; whereby it was expressely forbidden, That no Iudge who had power to enioine or impose any paine and amercement, should name the fine of an Oxe, vnlesse he had passed that of a Sheep first. The solemne games and plaies also in the honour of Kine and oxen, they who frequented them, called Bubetij. Moreouer, king *Seruius* at the first when hee made brazen coine, stamped the peeces with the portraiture of Sheepe, Kine, and Oxen. By the lawes of the twelue Tables, all persons whatsoeuer aboue foureteen yeares of age, were forbidden vnder pain of death, either by stealth, to feed their cattell in the night time vpon any corn-field of another mans, ploughed and sown; or to cut the same downe by syth or sickle at such a time, and in that manner. By the same laws also ordained it was, That whosoeuer was attaint or conuicted thereupon, should be hanged by the head and strangled for satisfaction of the goddesse *Ceres*: and in one word, to be more grieuously punished than in case of man-slaughter. But if the offender were vnder that age beforesaid, the same law prouided, that hee should be whipped at the discretion of the Pretor or Lord chiefe Iustice for the time beeing: or, if this punishment were remitted by the partie who sustained the domage, then hee should satisfie vnto him for the trespasse as a slaue, and pay double for the losse, according as honest and indifferent men valued it. Furthermore, in antient time, the distinction of States and degrees in the city of Rome (both for wealth and worship) was according to their lands, and not otherwise. Insomuch, as those citizens were reputed for chiefe and principall, who were possessed of Land and liuing in the Countrey: and these made the State, called the Rusticke Tribes, in Rome: whereas contrariwise the other estate, reputed the

A the meaner in degree, was named the Vrbane Tribes; consisting of Artisans and such like as were not landed persons: into which, if a man were transferred from any of the rest, it was thought a great shame and disgrace, as if he were reproched for idlenesse & negligence in husbandry. And hereupon these foure Tribes alone took name of those foure principall parts or quarters of the city wherein they were seated; to wit, Suburrana, Palatina, Collina, and Exquilina. Ouer and besides, vpon faires and market daies, the Rustick Tribes vsually visited the city: vpon which daies therefore no publick assemblies of the people were holden, to call the Commons away from their market affaires. Also the manner in those daies was to take their sleepe and repose in good straw and litter. Yea, and when speech was of glory and renowne, men would call it by no other term but Adorea, of Ador, a kind of fine red wheat. Where, by the way, I haue
B in great admiration the antique words of those times, and it doth me good to think how significant they were. For thus we read in the sacred Pontificall Commentaries of the high priests, *For the Augurie or solemne sacrifice called * Canarium, let there be certain daies appointed, to wit, before the corn shew eare out of the hose, yea, and be fore th at it come into it.* But to return againe to the praise of Husbandry. When the world was thus addicted and giuen to Agriculture, Italy was not only well prouided and sufficiently furnished of corne, without any help from out prouinces; but also all kind of grain and victuals were in those daies so exceeding cheap, as it is incredible: for *Manius Martius* a Plebeian Edile of Rome, was the first man that serued the people wheat at one Asse the Modius: and after him *Minutius Augurinus*, the eleuenth Tribune of the commons (euen he who indited that mutinous and seditious citizen *Sp. Melius*) brought down the price of
C wheat for 3 market daies to an Asse the Modius. The people therefore of Rome, in regard of this good deed of his, erected a statue for him without the gate Trigemina; and that with such affection and deuotion, that euery man contributed somewhat thereto by way of beneuolence. *Trebius* also in the time of his Ædileship, caused wheat to be sold vnto the people at the same rate; to wit, one Asse a Modius. For which cause, there were 2 statues also in memorial of him set vp; both in the Capitoll and also in Palatium: and himselfe when he was departed this life, had this honor done vnto him by the people, at his exequies, as to be carried on their shoulders to his funerall fire. It is reported moreouer, That in the very same yeare wherein the great goddesse *Cybele* (called also the mother of the gods) was brought to Rome, there was a more plentifull haruest that Summer, and corn was at a lower price than had bin known in ten yeares
D before. Likewise, *M. Varro* hath left in writing, That when *L. Metellus* made shew of so many Elephants in his triumph at Rome, a Modius of good red wheat, was worth no more than one Asse, also a gallon of wine cost no more. And as for drie figges, thirty pound weight carried no higher price: and a man might haue bought a pound of Oile oliue, and 12 pound of flesh at the very same reckoning. And yet all this plenty and cheapnesse proceeded not from the great domaines and large possessions of those priuate persons that incroched vpon their neighbors, and hemmed them within narrow compasse. For by the law published by *Stolo Licinius*, prouided it was, that no Roman citizen should hold in priuat aboue fiue hundred acres. The rigor of which law or statute was extended and practised vpon the Law-maker himselfe, and by vertue thereof he was condemned: who, for to possesse aboue that proportion, and to defraud the meaning of
E the said Act, purchased more lands in the name of his Son. Loe what might be the proportion and measure of possessions allowed euen then, when as the State and Common-wealth of Rome was in the prime and began to flourish. And as for the Oration verily of *Manius Curius* after such triumphs of his, and when he had subdued and brought vnder the obeisance of the Roman Empire and laid to their dominion so many forrein nations; what it was, euery man knoweth, wherin he deliuered this speech, That he was not to be counted a good man, but a dangerous citizen, who could not content himselfe with a close of seuen acres of ground. And to say a truth, after that the kings were banished out of Rome, and their regiment abolished, this was the very proportion of land assigned to a Roman Commoner. If this be so, What might be the cause of so great plenty & abundance aforesaid in those daies? Certes, this & nothing els, great LL. and
F generals of the field (as it should seem) tilled themselues their ground with their own hands: & the Earth again for her part, taking no small pleasure (as it were) to be eared and broken vp with ploughes Laureat, and ploughmen Triumphant, strained her selfe to yeeld increase to the vttermost. Like it is also, that these braue men and worthy personages were as curious in sowing a ground with corne, as in ordinance of a battell in array: as diligent (I say) in disposing and ordering

* Made with red dog to, pacifie the Dog starre.

ring of their lands, as in pitching of a field: and commonly euery thing that commeth vnder G
good hands, the more neat and cleane that the vſage thereof is, and the greater paines that is ta-
ken about it, the better it thriueth and proſpereth afterwards. What ſhall we ſay more? was not
[*C. Attilius*] *Serranus* (when the honorable dignity of Conſulſhip was preſented vnto him, with
commiſſion to conduct the Roman army) found ſowing his own field and planting trees, where-
upon he took that ſyrname *Serranus*? As for *Quintius Cincinnatus*, a purſeuant or meſſenger of
the Senat brought vnto him the letters patents of his Dictatorſhip, at what time as he was in
proper perſon ploughing a peece of ground of his owne, containing foure acres and no more,
which are now called Prata Quintiana, [*i. Quintius* his meadowes] lying within the Vaticane: and
(as it is reported) not onely bare-headed was hee and open breaſted, but alſo all naked and full H
» of duſt. The foreſaid officer or ſergeant taking him in this maner, Do on your cloths ſir (quoth
» he) and couer your body, that I may deliuer vnto you the charge that I haue from the Senate
» and people of Rome. Where, note by the way, that ſuch Purſeuants and Sergeants in thoſe daies
were named Viatores; for that eſtſoones they were ſent to fetch both Senatours and Generall
captaines out of the fields where they were at worke: but now, ſee how the times be changed!
They that doe this buſineſſe in the field, what are they but bond-ſlaues fettered, condemned
malefactors manacled, and in one word, noted perſons, and ſuch as are branded and marked in
their viſage with an hot yron? Howbeit the Earth, whom wee call our Mother, and whom wee
would ſeem to worſhip, is not ſo deafe and ſenceleſſe, but ſhe knoweth well enough how ſhee is
by them depriued of that honour which was done in old time vnto her: inſomuch, as wee may
well weet, that againſt her will ſhee yeeldeth fruit as ſhee doth; how ſoeuer wee would haue it I
thought, by theſe glorious titles giuen vnto her, that ſhe is nothing diſpleaſed therewith, name-
ly, to be labored and wrought by ſuch vile and baſe hirelings. But we forſooth do maruell, that
the labor of theſe contemptible bond ſlaues and abiect villains doth not render the like profit,
as that trauell in former times of great captains and LL. Generalls. And in very truth, euen a-
mong other forrein nations, it was counted a princelike profeſſion indeed, to be able for to giue
rules and directions about Husbandry: for ſo we may ſee, that both kings haue ſtudied this ar-
gument, as namely, *Hiero*, *Philometor*, *Attalus*, and *Archelaus*: and alſo martiall captaines; to
wit, *Xenophon*, and *Mago* the Carthaginian. As for *Mago* verily, our Senate did him that honour
after Carthage was woon, that in ſacking it and giuing away among diuers LL. of Affricke,
the Libraries there found; they thought good to reſerue only 28 volumes of his, and penned by K
him as touching Agriculture, and ſo haue them tranſlated into the Latin tongue (notwithſtan-
ding that *M. Cato* had already beforetime put out in writing and ſet forth certaine rules & pre-
cepts therof:) giuing order for this tranſlation, to thoſe that were well ſeene in the Punicke or
Carthaginian language: in which buſineſſe, *D. Syllanus* a Romane gentleman of a right worſhip-
full houſe, went beyond all others. As for great ſchollers and men of profound and deep lear-
ning, a number there were beſides that trauelled in this matter, whom wee haue named already
in the forefront; and eſtſoones ſhall mention in the diſcourſe of this volume. In which range
we muſt nominate not vnthankfully among the meaneſt writers, *M. Varro*, who beeing foure-
ſcore yeares old and one, thought it not amiſſe to compile a ſpeciall booke and treatiſe of Huſ-
bandry.

Chap. IIII.

¶ *The manner of Husbandry in antient time.*

LAte it was ere the Romans began to ſet their minds vpon Vines and Vineyards: for at firſt
they tilled only corne fields for very neceſſitie, euen as much as might ſuffice to ſerue the
city. The order and manner whereof, I will ſet in hand to treat of; not after a vulgar and
common ſort, but according to my vſuall manner hitherto more ſoundly: as hauing fought out
with all care and diligence, not only the antient practiſe in times paſt, but the inuentions alſo
of late daies; & withal ſearched into the cauſes and reaſons of euery thing, and found them out.
My purpoſe is beſides, to ſpeake in this treatiſe of the fixed Starres; their riſing and ſetting, M
their apparition and occultation, together with their influences, as they are vndoubtedly obſer-
ued and ſeen here vpon earth. And this, my meaning is to do after a plain and familiar ſort, for-
aſmuch as they, who hitherto wrote of this argument, haue handled the ſame ſo ſubtilly, and
penned

A penned it with ſo high a ſtile, as they may ſeeme to any man for to haue written books for Ora-
tours to reade, rather than to the capacity of plaine husbandmen for to practice. Firſt and fore-
moſt therefore, I will for the moſt part deale by Oracles, that is to ſay, ſententious Sawes, for to
determine this queſtion in hand: concerning which, there are as many to be found in number,
and thoſe as true in effect, as in any other part and profeſſion of this our life whatſoeuer. And
leaſt any man ſhould think it ſtrange, that I cal theſe rules of Husbandrie, Oracles; who would
take them for leſſe, conſidering how they proceed from Time, a good moſt certaine, and are deli-
uered and approoued by Experience, the trueſt prophet of all others. And beginne I will with
Cato firſt.

Chap. V.

B ¶ *The praiſe and commendation of Husbandmen: what things are to be required in the purchaſing or taking to ferme of houſe and land.*

THe children (ſaith *Cato*) that are begotten by husbandmen, proue moſt valiant, the hardieſt
ſouldiers, and ſuch as thinke leaſt harme of all others. In buying of land, take heed you be «
not too hot and eager vpon the purchaſe. In the husbanding of ground, ſpare for no paine «
and trauell; but in the purchaſing therof be you nothing forward: a thing ouer-bought, hath e- «
uermore repentance, and had I wiſt, attending vpon it. They that are about a purchaſe, ought a- «
boue all, to ſee how the ground is watered, what waies and auenues be about it, and what neigh- «
bors be neare vnto it. Out of euery one of theſe points, matters of great importance and deepe «
C concluſions may be picked, and thoſe moſt certaine and infallible. *Cato* addeth moreouer and
ſaith, That there would be good regard had of the people confining, and other grounds boun-
ding thereupon, whether they be well liking, faire, and trim to ſee vnto? For theſe be his words,
It is a good ſigne (quoth he) that the ferm is well ſeated and in a commodious quarter, if all a-
bout looke well. *Attilius Regulus* (hee who during the firſt Punicke warre was twiſe Conſull of
Rome) was wont to ſay, That a man ſhould not purchaſe an vnwholeſome piece of land, were it
neuer ſo rich and fruitfull; nor make choice of a barren ſoile, were it neuer ſo healthie. Now as
touching the healthfulneſſe of a place, a man may not alwaies conclude therof by the color and
freſh hue of the inhabitants: for many times it falleth out, that thoſe who be vſed to peſtilent
places, hold out well and haue their health; yea and by their lookes bewray no harme that they
D take. Moreouer, ſome quarters and coaſts there be, which at ſome times of the yeare ſtand ſound
and healthy enough: but I will count none holeſome, but ſuch as be healthfull all the yere long.
An ill piece of land is that, which putteth the lord thereof to pain, and with which he is forced
to wreſtle for to haue his health. *Cato* would haue this point eſpecially to be conſidered, that the
ſoile of a ferme (ſcituat as hath bin ſaid) be good of it ſelfe, and fertile: alſo, that neere vnto it
there be ſtore of laborers: and that it bee not farre from a good and ſtrong towne: moreouer,
that it hath ſufficient meanes for tranſporting of the commodities which it yeeldeth, either by
veſſels vpon water, or otherwiſe by waines vpon the land. Furthermore, that the manour houſe
be well built, and the land about it as well husbanded. Howbeit, herein I ſee many men to erre
much, and greatly to be deceiued: for they hold opinion, that the negligence and ill husbandry
E of the former lord, is good for him that ſhall purchaſe land and come after him. But I ſay, there
is nothing more dangerous and diſaduantageous to the buyer, than land ſo left waſt and out of
heart: and therefore *Cate* giueth good counſell, to purchaſe land of a good husband, and not
raſhly and hand ouer head to deſpiſe and ſet light by the skil and knowledge of another. Who
ſaith moreouer, That as well land as men (which are of great charge and expence) how gaineful
ſoeuer they may ſeeme to be, yeeld not much profit in the end to the maſter *declaro*, when all
counts be caſt and reckonings made. He therfore judgeth, that the Vine yeeldeth the beſt reue-
nue, of all commodities belonging to a ferme: and good reaſon he hath ſo to ſay, becauſe aboue
all things he taketh order to cut off expence as much as may be. Next to it, he reckoneth Hort-
yards, ſuch eſpecially as haue water at command: and good cauſe why, prouided alwaies that
F they lie vnder a good towne ſide. [In the third place he rangeth the Oſier plots, and after them
Oliue rewes:] then he counteth of medows, which our anceſtors called Parata, as a man would
ſay, Ready and prouided. The ſame *Cato* being asked, What was the moſt aſſured profit riſing
out of land? made this anſwer, *To feed Cattell well*: beeing asked againe, What was the next?
Marie (quoth hee) *to feed in a meane*. By which anſwers he would ſeeme to conclude, That the

most certain and sure reuenue was that, which would cost least. Howbeit, th is is not so generall a rule, but it may alter according to the diuersitie of places, & sundry occasions occurrent. Hereunto also is to be referred another speech of his, That a good husbandman ought to be a seller, [and not a buyer:] as also, That a man should make speed in his youth, and not delay to plant and stocke his ground; but not to build thereupon, before it be well and throughly stored that way: and euen then also, he should not be forward thereto, but take leisure ere he be a builder: for it is the best thing in the world (according to the common prouerbe) To make vse and reap profit of other mens follies: prouided alwaies, that a mans land be not ouer-built, lest the expence of keeping all in good repaire, be chargeable and burdensome. Now when there is a sufficient and competent house builded thereupon, a good husband will vse to repaire often thereunto, and take pleasure so to do: and verily a true saying it is, That the lords eie is far better for the land, than his heele.

Chap. VI.

¶ How to chuse a conuenient place for to build a manour house in the country. Also certain rules obserued in antient time, as touching Husbandrie and tilling ground.

IN building vpon a mans land, this mean and moderation is commended, That the house be answerable in proportion to the ground: for as it is a bad sight to see a large domain and circuit of ground without a sufficient graunge or home-stal to it; so it is as great a folly to ouer-build the same, & to make a faire house where there is not land enough lying to it. Like as there were two men at one time liuing, who faulted diuersly in this behalfe; to wit, *L. Lucullus* and *Q. Scæuola*, for the one was possessed of faire lands without competent building thereto, whereas *Lucullus* contrariwise built a goodly house in the country, with little or no liuing adjoyning to it: in which regard, checked he was by the Censors, for sweeping more floures than he ploughed lands. Now in building, there would be art and cunning shewed: for euen of late daies *C. Marius* (who had bin seuen times Consull of Rome) was the last man that built an house within the territory of the cape Misenum, and he seated it so, as if he had pitched & fortified a camp right skilfully; in such sort, that when *Sylla* syrnamed *Fælix* [*i.* Happy] saw his manner of building, he gaue out and said, That all the rest in comparison of him, were blind beetles, and knew neither how to build nor to encamp. Well then, a house in the country would be set neither neere vnto a fenny and dormant water, ne yet ouer-against the course and stream of a running riuer: and yet what saith *Homer* besides to this purpose? The aire and mists (quoth he, and that right truly) arising from a great riuer betimes in a morning before day-light, cannot chuse but be euer cold and vnwholesome. How then? mary if the country or climat be hot, an house must stand into the North; but in case the quarter be cold, it ought to affront the South: if the tract be temperate between both, it should lie open vpon the East point, where the Sun riseth at the Æquinoxes.

As touching the goodnesse of the soile; and namely what signes and marks there be of it; although I may seem to haue sufficiently spoken already, in the discourse which I had of the best kind of ground, yet I am content to subscribe to other tokens thereof deliuered by other men, and especially by *Cato* in these words following: *When you see* (quoth hee) *growing vpon any land, store of Walwort, Sheg trees, Brambles, the little wild Bulbous Crow-toes*, [called otherwise our Ladies Cowslips] *Clauer-grasse or Trifoile, Melilote, Oke, wilde Pyrries, and Crab-trees; know yee, that these doe shew a ground good for Wheat, and such like white-corne.* So doth also the blacke mould and that of ashes colour, testifie no lesse. Where there is store of chalke or plaister, the ground is not so fit for corne; for all kinde of chalke doth heat ouermuch, vnlesse the same be very leane. The like doth sand also, if it be not passing fine and small. And the effects aboue said are much more seen in the plaines and champaine vallies, than vpon the hills and mountaines. Our ancestours in old time thought it a principall point of Husbandry, not to haue ouermuch ground about one graunge: for they supposed more profit grew by sowing lesse, and tilling it better: of which mind I perceiue **Virgil* was. And to say a truth, confesse we must needs, That these large enclosures and great domains held by priuat persons, haue long since bin the ruine of Italie, and of late daies haue vndone the prouinces also thereto belonging. Six Land-lords there were and no more, that possessed the one moitie of all Africke, at what time as the Emperour *Nero* defeated and

*Laudato ingentia rura, Exiguum colito.

and put them to death. Where, by the way, I may not defraud *Cn. Pompeius* of the due glory answerable to that greatnesse of his, who neuer in all his life would purchase any ground that butted or bordered vpon his owne land. *Mago* thought it no reason, but a very vngentle and vnkind part for the buying of land, to sell a man from house and in his conceit, it preiudiced much the weale-publick. And verily this was the principall point that he recommended in the entrance of his treatise and rules set downe for Husbandry, so as a man might perceiue very euidently, that hee required continuall residence vpon the land. Next to these principles aboue named, great regard would be had in chusing of good & skilful bayliffs of the husbandry, concerning whom *Cato* hath giuen many rules. For mine own part, it shal suffice to say thus much only, that the lord ought to loue his bayliffe very well, & set him next to his heart: but himself should not let him know so much. Moreouer, I hold it the worst thing that is, to set slaues & condemned persons in their gyues & chains, about tilling and husbanding of a ferm: neither do I like of any thing don by such forlorne and hopelesse persons; for lightly nothing thriues vnder their hand. I would put down one saying more of our antient forefathers, but that haply it may seeme a fond & rash speech, yea and altogether incredible, & that is this, *Nothing is lesse profitable, & lesse expedient, than to labor a ground exceeding much, and to ouer-til it. L. Rarius Rufus*, a man of very base and low parentage descended, & yet aduanced to the Consular dignity for his prowesse in feats of arms; was otherwise very thrifty and sparing, after the maner of the old world, insomuch as parely by his niggardise and partly through the liberality of *Augustus Cæsar*, he had gathered good together amounting to the sum of an hundred millions of Sesterces: all which masse of money, what with purchasing land to land in the Picene country, and what with bestowing such a deale of husbandry vpon it, more ywis of a vain glory and ostentation, than for any profit that he reaped thereby, he laid forth and spent euery whit of that stock; insomuch as hardly he could finde any man that would take vpon him to be his executor, or to accept simply of the inheritance. What shall we say then? or what good commeth of such houses or lands so chargeable, as that they are like to cost a man his life, and that by famine? I hold therfore, that in all things a weak is best, and bringeth greatest profit in the end. To till and husband ground well, is necessary; to ouer-do the same and to exceed, turneth more to the damage than the profit of the lord, vnlesse it were done by his own children, or to maintain the charge of keeping such hinds as otherwise must be found if they sat still and did nothing: for setting that cause aside, it falleth out oftentimes, that the gathering and inning of some haruest (if a man count all the pains employed, and the mony of the purse) is nothing beneficial to the master. In like maner, Olives would not alwaies be tended and looked vnto ouermuch: neither do some grounds require much diligence, but are the worse for such attendance: as may be seen (by report) in Sicily, which is the cause that new commers thither for to be tenants, and to occupy those lands, are many times deceiued and put besides their reckoning.

After what manner then shall we proceed in the husbandry of our land to most benefit, and behoofe? Learn a rule out of the Oracle or sententious riddle, which goeth in this forme, *Malis bonis?* Cheapest, best. But herein, me thinks, good reason it is, that our old great grandfathers should be defended and excused for holding these strange and obscure paradoxes; they (I say) who by such rules and precepts, tooke great care and paines to instruct vs how to liue. Would you know then what they meant by this word *Malis?* surely they vnderstood those that were cheapest and stood them in least. The chiefe point of all their prouidence and forecast, was to goe the neerest way to worke, and to be at the smallest cost: and no maruell, for who were they that gaue out these thriftie precepts? euen those, who reproched a victorious General and one who triumphed ouer the enemy) for hauing a cupboord of siluer plate weighing but ten pound: those (I say) who if their bayliffes of husbandrie chanced to die, whereby their lands in the countrey stood void, would make suit to be gone themselues thither, and to return to their own farmes; leauing behind them the glory of all their victories by them atchieued: and to conclude, euen those who whiles they were imployed in the conduct of armies, had their grounds looked vnto and tilled at the charges of the common weale, and had no other for their bayliffs than the noble Senators of Rome. From their mouths came these other oracles and wise sentences following. An ill husband is he, who is forced to buy that, which his ferme might afford him. As bad is that householder & master of a family, who doth that in the day which might be don by night, vnlesse vnseasonable weather driue him to it: worse than either of these is he, who

doth that vpon work-daies which should haue bin done on play daies or idle holidaies: but the worst of all other is he, who when the weather is fair, wil chuse to work rather within close house than abroad in the open field: & here I cannot hold and rule my selfe, but I must needs alledge one example out of antient histories, whereby it may be vnderstood, How it was an ordinary matter to commense actions and to maintaine pleas in open court before the body of the people in the case of Husbandry: as also in what sort those good Husbandmen of old time were wont to defend their owne cause when they were brought into question. And this was the case. There was one *C. Furius Cresinus*, late a bond-slaue, and newly infranchised, who after that hee was set at liberty, purchased a very little piece of ground, out of which he gathered much more commodity than all his neighbors about him out of their great and large possessions: whereupon he grew to be greatly enuied and hated; insomuch, as they charged him with indirect means, as if he had vsed forcery, and by charmes and witch-craft drawne into his owne ground that increase of fruits, which should otherwise haue growne in his neighbors fields. Thus vpon complaint and information giuen, he was presented and indited, by *Spurius Albinus*, an Ædile Curule for the time being: and a day was set him down peremptorily for his personal appearance to answer the matter. He therfore fearing the worst, and doubting that he should be cast to pay some grieuous fine; at what time as the Tribes were ready to giue their voices, either to acquit or condemne him, brought into the common place his plough, with other instruments and furniture belonging to husbandry: he presented likewise in the open face of the court, his owne daughter, a lusty strong lasse and big of bone; yea, and (as *Piso* telleth the tale) well fed, and as well clad: he shewed there (I say) his tooles and plough yrons of the best making, and kept in as good order; maine and heauy coulters, strong and tough spades, massie and weighty ploughshares, and withall his draught Oxen, ful and faire. Now, when his course came to plead his own cause before the people, and to answer for himselfe, thus he began and said: My masters (quoth he) you that are citizens of Rome, behold, these are the forceries, charms, and all the inchantments that I vse (pointing to his daughter, his oxen & furniture abouenamed;) I might besides (quoth he) alledge mine owne trauell and toile that I take, the early rising and late sitting vp so ordinary with me, the carefull watching that I vsually abide, and the painefull sweats which I daily indure; but I am not able to represent these to your view, nor to bring them hither with me into this assembly. The people no sooner hard this plea of his, but with one voice they all acquit him and declared him vnguilty, without any contradiction. By which example verily, a man may soone see, that good husbandrie goeth not all by much expence: but it is pains taking and careful diligence that doth the deed. And hereupon came the old sayd saw, so rise in euerie mans mouth, that the only thing to make ground most fertile and fruitfull, is the Masters eie. As for all other rules and precepts of Agriculture, respective to this or that peculiar point of husbandry, I will deliuer them in their proper places accordingly. And in the meane time I wil not omit such as be more generall, as they shal come into my mind and remembrance. First and formost, there offereth it selfe to me one aboue the rest, wherof *Cato* is the Author, and which of all others I hold to be most profitable and founding to ciuilitie; to wit, that in all our doings we aime at this, To haue the loue and good will of our neighbors: and that for many and sufficient reasons by him alledged, which I suppose no man will make any doubt of. *Imprimis*, hee giueth a good caueat, That our seruitors and people about vs be not shrewd, but well ordered, and that none of our family be ill disposed to offer any wrong. *Item*, All good husbands agree in this, that nothing would be done too late and when the time is ouerhipt. And againe, That euery worke should haue the due and conuenient season: to the same effect there is a third admonition, namely, That when the opportunity is once past, in vain we seek to recall and recouer it. As touching a rotten and putrified ground, we haue at large shewed already how much *Cato* doth abhor and curse it. And yet he ceaseth not to forewarne vs of it, and besides, to giue vs these rules following. What work soeuer may be performed by a poore Asse, is thought to cost little or nothing, and to be done very cheape. Ferne or Brake will die at the root in two yeares, if you wil not suffer it to branch and grow aboue ground: and this shall you hinder most effectually, in case you knap off the head of the first spring with a wand or walking staffe: for the liquid juice dropping downe from them, doth kill the root. It is commonly said also, that if they be pulled vp about the summer Sun-stead, they will not come againe but die: as also, if they be topt, or their heads whipt off with a reed: or if they be cared vp with the plough, so as there be a reed fastned to the share.

share. Semblably, for to kill reeds, they giue order to plough them vp, with some Fern likewise laid vpon the share. A rushie ground must be broken vp and turned ouer & ouer with the broad spade: but if it be stony, it would be digged with a mattock or two tined fork. Rough grounds and giuen to beare shrubs, if a man would stork, the best way is to burne them vp by the roots. If the place lie low, and be ouermoist, the onely meanes to make it sound and drie, is to draine away the water by trenching. In case a ground doe stand vpon chalke or plaister, the ditches or trenches therin should be left wide open; but if the soile be more loose & not so fast, they must be strengthned and kept vp with quick-set hedges, for feare of falling; or else they ought to be made in such sort, as both the sides thereof be well bedded and couched, bearing out a belly a-slope, and not digged plum downe-right. Some would be closed vp aboue, and made very strait and narrow, for to run directly into others that are more wide and large: also, if occasion doe so require, the bottome of their channell would be paued with pebble, or laied with good grauell. As for the mouth and end therof (to wit, for entrance and issue) they ought both of them to be fortified and vnderset with two stones at either side, and a third laied crosse ouer them. Last of all, if a ground run to wood and be ouergrowne therewith, *Democritus* hath taught vs the means how to kill the same in this manner, Take Lupine floures, let them be steeped one whole day in the juice of Hemlock, and therewith be sprinckle and drench the roots of the shrubs that ouerran the place, and they will die.

Chap. VII.

¶ *Sundry sorts of corne, and their seuerall natures.*

NOw that we haue thus shewed the way how to prepare a field for to beare corne, it remaineth to declare the nature of corne. And to speake generally of all graine, there are two principall kinds thereof; to wit, first Fourment, containing vnder it wheat and Barley, and such like: secondly, Pulse, comprising Beans, Pease, Chiches, &c. The difference obserued both in the one sort and the other, is so euident and plaine, that needlesse it is for me to vse any words thereof. And as for the former kind called Fourment, it is diuided also into sundry sorts, according to the seuerall seasons wherein they be sowne. First there is the Winter corn, which being sowed about the setting of the star Virgilia, *i.* in Nouember, lieth all winter long in the ground and there is nourished, as for example, Wheat, Rie, and barley. Secondly, Summer corne, which is put into the earth in Summer about the rising of the foresaid star Virgilia, *i.* The Brood-hen, to wit, in May; namely, Millet, Panick, Horminum, and Irio (two kinds of grain.) But note that I speak here of the manner vsed in Italy. For otherwise in Greece and Asia, they sow all indifferently at the retrait or occultation of Virgiliæ: and to come again to our Italy, some grain there is which is sown there, both in Winter and Summer: as also, you shall haue other corne sowed in a third season; to wit, in the Spring. Some there be who take for Spring-corn, Millet, Panick, Lentils, cich Pease, and the grain wherof * Fourmenty is made. But Wheat, Barley, Beans, Nawes, Turneps, and Rapes, they hold for Sementina, *i.* to be sowed at the proper and timely season of seeds, *i.* in Autumne. In that kind of corne which comprehenderh Wheat, there is to be reckoned that grain which serueth for prouender and forrage, and is sown for beasts, & namely, that which they call dredge or ballimong. Likewise, in the other kind, to wit, of Pulse, the Vetches be comprised: but that which is good indifferently both for man and beast, is the Lupine. All sorts of Pulse called in Latine Legumina, vnlesse it be the Bean, haue but one root apiece, and such be as hard as wood, and full of shoots, and those diuided into forked braunches: and the roots of the cich Pease run deepest into the ground. But all other corne vnder the name of Frumenta, haue many small fillets or strings appendant to the roots, & otherwise branch not: as for Barly, it chitteth and begins to shew within 7 daies after it is first sowne. All sorts of Pulse appeare aboue ground by the fourth day or the fift at the vtmost. And yet Beans ordinarily do lie in the ground 15 or 20 daies. How soeuer in Ægypt all Pulse commeth vp by the third day. In Barly, one end of the seed runneth to root downward, and the other into blade, and that * bloometh first. Now, if you would know which end seueth for the one and the other; certaine it is, that the bigger and thicker part of the grain yeeldeth root, and the smaller the greene blade. In all other seeds there is no such diuersitie, for from one and the same end breaketh out both root and greene blade. All kind of corn carying spike or eare, called Frumenta, shew nothing but the green blade during winter; howbeit, no sooner commeth the spring, but they begin to grow vp into

* Alica.

* No maruell being sowed before winter.

into ſtraw, and to ſpindle vpward pointwiſe, I meane all that be of the winter kind. But Millet and Panick run vp into an hollow ſtem full of knots and ioynts: and Seſama by it ſelf into a kex or hollow ſtem in maner of fenell and ſuch like. The fruit or ſeed of all graine that is ſowne or ſet, is contained within eares, as we ſee in (bearded) wheat and barley, and the ſame is defended as it were with a paliſaide of eales, diſpoſed ſquare in foure rankes; or is incloſed within long cods and husks, as the Pulſe kind; or els lieth in little cups, as Seſame and Poppie. Millet and Panick only put forth their fruit grape-wiſe and openly, without any partitions and defences, ſo as their ſeed is expoſed to the little birds of the aire: for no otherwiſe are they defended, than within ſmall skins and thin huls. And as for Panick, it taketh the name of certain panicles or chats hanging from the top thereof, whereby the head bendeth and leaneth downward, as if it were weake and wearie of the burden. The ſtem or ſtalk thereof groweth ſmaller and ſmaller, and pointed vpward: inſomuch as by little and little it runneth vp in maner of a little ſprig or fiſion, and there you ſhall ſee a number of ſeeds or grains cluſtered together thicke, inſomuch as they are ſomtimes bunched with an head a good foot long. As touching the Millet, the head thereof bearing ſeed round about is bent likewiſe and curbed, beſet alſo with fringes, as it were, of haily fillets. But to return to Panick againe, there be ſundry ſorts thereof: for ſome of it is found with a tuft or bunch, from which depend certain ſmall cluſtered chats or panicles; & the ſame alſo hath two knaps or heads, and this is called Mammoſum, as one would ſay, the Panick with bigs or dugs. Moreouer, you ſhall haue Panick ſeed of ſundry colours, white, blacke, and red, yea and purple. Of Mill or Millet there be diuers ſorts of bread made in many places; but of panick it is not ſo common: howbeit there is no grain more ponderous and weighty than it, or which in the ſeething or baking ſwelleth and riſeth more; for, out of one Modius or pecke thereof there is ordinarily made 60 pound of dough for bread. Moreouer, take but 3 ſextares or quarts of it being ſteeped, and it will yeeld a meaſure called Modius, of thicke gruel or batter, called in Latine Puls. It is not fully ten yeres ſince there was a kind of * Millet brought out of India into Italy, and the ſame was of colour black, the ſeed or grain in quantitie big and faire, and for ſtem like vnto a reed. It riſeth vp in height ſeuen foot: the ſtalks are mighty and great, ſome call them Lobæ or Phobæ. Of all ſorts of corne it is moſt fruitfull, and yeeldeth greateſt increaſe: for of one grain a man ſhal haue 3 ſextars or quarts again. But it loueth, yea & ought to be ſown in a moiſt ſoile.

* i. Turkiſh Millet.

Moreouer, ſome kinds of ſpiked corn begin to ſpindle and gather eare at the third ioynt, others at the fourth: but there it lieth as yet hidden and incloſed. Now as touching theſe ioints, wheat beareth vſually foure, beere Barly ſix, and the common ſprit Barly eight, which is wel to be conſidered: for no corn vſeth to ſpier before it be fully knotted or iointed in maner aboue-ſaid. And ſo ſoon as the ſaid ſpier ſheweth ſome hope of an eare, within 4 or fiue daies after at the moſt, they begin to bloum: and in as many dayes ſpace, or little more, they will haue done and ſhed their floures. And yet I muſt needs ſay, that all ſorts of barley are a ſeuen-night at the vtmoſt in ſo doing. *Varro* ſaith, that in foure times 9 daies this kind of corn commeth to perfection: but it ought to ſtay nine moneths before it be ripe for to be reaped and mowne downe. As for Beanes, after they be ſet or caſt into the ground, firſt they put forth leaſe, and afterward ſtalk, that ſhooteth vp euen, without any partition of ioynts or knots between. All other pulſe beſides the Bean, haue a more ſollid and wooddy ſubſtance in the ſtraw. Of which, the Chich peaſe, the Ervile, and Lentils doe ſpred forth in branches. And ſome of them runne ſo low that they creep along the ground, vnleſſe they be born vp and ſupported with ſome props, as for example Peaſe, which help if they miſſe they proue the worſe for it. Of all manner of Pulſe, the Bean alone and Lupine beare but one ſingle ſtalke apiece: the reſt doe branch into very ſmall ſprigs or tendrils. Howbeit none of them but their ſtalke or ſtraw is fiſtulous and hollow in maner of reeds. Some pulſe put out leaues preſently from the root: others again from the top or head only: wheat and Barly both the one and the other: and what corn ſoeuer ſtandeth vp on a ſtalk, beareth one leafe in the head or top thereof. But the leaues of Barly are rough, whereas in other corn they be ſmooth. Contrariwiſe, Beanes, Chiches, and Peaſe haue many leaues. In ſpiked corn the leafe reſembleth that which groweth to reeds: in Beans they be round, and ſo likewiſe in the moſt kinds of puls, howbeit in peaſe and Ervile we ſee they be ſomwhat longer. The leaues of Faſels or Kidney beanes are ribbed and full of veines: of Seſama and * Irio they be red and reſemble bloud. The Lupines only and the Poppies do ſhed their leaues. All pulſe

* i. Turkiſh corne.

A pulſe is long in the bloom, and namely Ervile and the Cich peaſe: but Beans continue longeſt, euen for the ſpace of 40 daies together: howbeit euery ſingle ſtalk beareth not bloum ſo long: but thus it is, as one hath done and giuen puer, another beginneth afreſh. Neither bloumeth the whole field at once, as ſpiked corn doth. Alſo, all kinds of Pulſe doe cod at ſundrie times, and not vpon the ſame day: beginning firſt at the bottome, and ſo likewiſe the floure riſeth vp higher by little and little. All corne growing in ſpike or eare, ſo ſoone as it hath done bloo-ming, waxeth big and ſtrong, and commeth to maturitie within forty daies at the fartheſt: ſo doth Beanes alſo: but the Cich peaſe receiueth her full perfection in very few daies: for, from the time that it was firſt ſowed, it groweth to be ripe in forty daies. Millet, Panick, Seſame, and all Summer corn, haue their full ripeneſſe forty daies after their blooming. But herein there is

B great diuerſitie, according to the clyme and the ſoile: in which reſpects corne ripeneth ſooner or later. For in Ægypt Barley is readie to be reaped in the ſixt moneth after it was ſowne, and Wheat in ſeuen: but in the region of Hellas in Greece, the Barley taketh ſeuen moneths; and in Peloponneſus or Morea, eight. As for wheat and ſuch like hard corne, longer it is ere it be ripe and ready for the ſycle. All Corne that groweth aloft vpon a ſtalke or ſtraw, beareth the graines arranged ſpikewiſe, and as if they were plaited and braided like a border of haire. In Bean ſtalks and other ſuch like pulſe, the cods grow in alternatiue courſe, ſome on the right ſide, others on the left, in order. Wheat and ſuch like ſpiked corne withſtand the winter cold better than Pulſe: but theſe yeeld a ſtronger food, and fill the belly ſooner. Wheat, Rie, and ſuch like grain are well wrapped within many tunicles. Barley for the moſt part lieth bare and

C naked: ſo doth Arince (i. a kind of Rice or Amel corn) and Oats eſpecially. The ſtraw of wheat and Rie is commonly taller than that of Barly. But the eiles of Barley are more rough and priſkie than thoſe of the other. Pol-wheat both red and white, yea and Barley alſo, is threſhed and driuen out of the huſk vpon a floore, and being thus threſhed clean and pure, it is either ground or ſowne againe without any parching or drying in a furnace. Contrariwiſe, the Beare corne or Bearded wheat, Far, Millet, and Panick, cannot poſſibly be made clean, vnleſſe they be firſt ſcudged and ſo dried. Theſe ſorts of graine therefore vſe to be ſowed raw and rude with their very huls: like as the Beare corn or bearded Far men are wont to keep ſtill incloſed within the huſk againſt ſeed time, and neuer parch or dry it at the fire. Of all the ſorts of grain before rehearſed, Barley is the lighteſt; for a Modius or pecke thereof ſeldome weigheth aboue 15 pounds,

D whereas the like meaſure of Beans poiſeth 22. The bearded corne Far is yet more ponderous than it; and Wheat more than all the reſt. In Ægypt they vſe to make certain frumenty meat or naked grotes of a kind of Rice or white Amel-corn, called Olyra, which is among them holden for the third ſort of Spike-corne. In Gaule likewiſe they haue a kinde of frumentie corne or gurts by themſelues, named in their language Brance, and with vs in Italy and about Rome, Sandalum: this grain is of all others moſt neat and faire, and this ſingular propertie it hath beſides different from the reſt, That ordinarily in euery meaſure called Modius, it yeeldeth more bread by foure pound weight than any other corne husked and dreſſed in maner aforeſaid. *Verrius* reporteth, That the people of Rome for 300 yeares together vſed no other meat than the grotes made of common Wheat. And as touching Wheat, there be many ſorts therof, diſtin-

E guiſhed by the names of the Regions and countries where they be found growing. Howbeit for my part I thinke verily, that there is no wheat in the world comparable to ours here in Italy, for it ſurpaſſeth all others both in whiteneſſe and alſo in weight: by which two marks eſpecially, as it is knowne from the reſt, ſo it is reputed for the very beſt. And if you take the wheat growing in the mountain countries of Italy, the beſt haply of forrein regions may match it, and that is the wheat of Bœotia: the principall of all others next to it, is that which growes in Sicily; and then that of Africk may be ranged in the laſt place: in a third rank is to be reckoned the Thracian and Syrian Wheat, and after them the Ægyptian, in regard of the weight that it carieth. Now theſe degrees of weight we gather by the proportion aſſigned to champions and wreſtlers, whoſe allowance was much like to the liurie giuen to laboring horſes, and as much in

F maner would their paunches both require and receiue: for according as they could eate of the one ſort more meaſures than of the other, * ſo aroſe theſe diſtinct degrees in the weight aboue ſaid. The Greeks make great account of the Wheat growing by Pontus, and highly commend it: but this neuer came into Italy, neither know wee what it is. The ſame Grecians preferred before all other grain, theſe three ſorts, to wit, Dracontias, Strangias, and Selinuſium; eſteeming

* For whereas of the Athenian Wheat, ſue demy Sextars, (i. two quarts and a halfe) were but ſufficient, three would ſerue and content them of the Bœotian (i. a quart & halfe) wherby it was collected, how much weightier this was than that.

ming the goodnesse of the corn by the thicknesse and bignes of the straw, and attributing these three kinds by that signe and argument, to the goodnesse and riches of the soile: and therefore they prescribed to sow this corn in a fat and battle ground. But the lightest in weight and poorest in substance, because it required much nutriment, they appointed to be sowed in moist places. Of this opinion and iudgment were the antient Greeks, during the reign of *Alexander* the Great, at what time as Greece was in the floure and height of her glory, as hauing the monarchie and soueraignetie ouer the whole world. Howbeit, before his death 145 yeares or thereabout, *Sophocles* the Poet in a Tragedie entituled Triptolemus, praised the Italian wheat aboue all other: for in effect thus he saith word for word;

Et fortunatam Italiam frumento canére candido.

And Italy, a land (I say) so happy and so blest,
Where stand the fields all hoare and gray with white Wheat of the best.

And in very truth our Italian wheat at this day carieth the name alone in that regard. I wonder therefore so much the more at the modern Greeks of late time, who made no mention at all of this our wheat. Now at this present, of all those kinds of outlandish wheat which are transported by sea into Italy, the lightest is that which commeth out of France and Chersonesus, [*i.* the streits of Callipolis] for a Modius or peck thereof containeth not aboue 20 pound weight, weigh the very graine it selfe as it groweth, vncleansed, huske and all. The Sardinian wheat is more weighty than it by halfe a pound in a Modius. And that of Alexandria exceedeth the French halfe a pound and *one third part, in euery measure before named. And this is the very poise also of the Sicilian wheat. The Bœotian is yet a full pound heauier: and that of Africk as much, and *three fourth parts of a pound more. In Lombardy & that tract of Italy beyond the riuer Po, I know ful wel that a Modius of their wheat weighed 25 pounds; and about Clusium 26. But be the corne what soeuer it will, this is the ordinarie proportion by the course of Nature, that being made into down-right houshold bread for soldiers, and to serue the campe, it ought to weigh as much as it did in corne, and one third part ouer and aboue. As also this is a rule, That the best Wheat is that which to euerie Modius will take and drink vp a gallon of water ere it be made dough. And yet some kindes of Wheat there be that will yeeld the full weight aforesaid in bread, and neuer count the water going thereto, & namely that which commeth out of the Balear Islands; for a Modius of that wheat yeeldeth in bread 30 pound weight: yet otherwhiles it falleth out in some kinds of wheat (being blended two sorts together, as namely that of Cyprus and Alexandria, whereof neither exceed little or nothing more than 20 pound weight to the Modius) that the bread made thereof will arise to the ordinary proportion: for the Cyprian wheat is not bright, but brown and duskish, and therefore makes a blacke kind of bread; in which regard the Alexandrian wheat, which is faire and white, is mixed with it, and so both together do yeeld in bread 25 pound weight. The wheat of Thebes addeth a surplusage thereto of one pound.

i. 4 ounces.
i. 9 ounces.

As for the maner of working and kneading dough, I like not their fashions who take sea water for that purpose, as most do that inhabit the sea coasts, thinking thereby to saue the charge of salt; for I hold this very hurtfull and dangerous. Neither doe I thinke, that vpon any other cause mens bodies are made more subiect to maladies, than by this means. In France & Spain, when the Bruers haue steeped their wheat or frument in water, and masht it for their *drink of diuers sorts, as heretofore hath bin shewed; they take the *skum or froth that gathereth aloft by the working of the wort, and vse the same in stead of leuen for to make their bread; which is the reason that their bread is lighter and more houved vp than any other.

*Zythum & curmi.
*Yest or barm

Moreouer, there is great difference in wheat by reason of the straw or stalk that bears it: for the thicker that it is and more full, the better is the corne taken to be. The Thracian wheat is inclosed and well clad (as it were) with many tunicles and coats; throughly prouided by that means (and good cause why) to resist the excessiue cold of that climat, which gaue the Thracians iust occasion also to cast about and deuise to haue a kind of wheat that remaineth vpon the ground not aboue three moneths, by reason that the snow ouerspreadeth the face of the earth all the yeare besides: and verily this kinde of corne is come into other parts of the world, and lightly within three moneths after it is sowed, you shall haue it readie to bee reaped. A practise

A ctise well knowne all the Alpes ouer, and in other cold and winterly regions, where (by report of the inhabitants) this kind of corne doth wondrous well, and none prospereth better or groweth more ranke than it. Ouer and besides, there is another kind of wheat that putteth vp from euery root one stalk and no more in any place what soeuer: the manner is to sow it in no ground but that which is light, and it neuer misseth. Also about the Thracian gulfe, there is wheat that within 40 daies after the sowing, will be ripe, and therupon it is called the Two-month wheat. And would you heare a wonder? there is no wheat more weighty than it, and besides it yeelds no branne at all. In Sicilie and Achaia both, there is great vse thereof, and namely among the mountainers of those two countries. Much seeking also there is after that corne in the Isle Euboea, about Carystus. See how much *Columella* was deceiued, who thought that there was not to
B be found so much as any kind of three months wheat; whereas it is plaine, that such hath beene of old and time out of mind. The Greeks also haue a proper name for it, and call it Trimenon. Furthermore, it is reported, that in the countrey Bactriana, there is some corne of that bignes, that euery graine is full as much as one of the eares of ours.

But to returne againe to our husbandry; of all spiked corne, Barley is sowed first: but I purpose to set down the very just time and season apropriat to each kind, according to the seueral nature of euery sort, which my meaning also is to declare. Mean while I cannot omit, that there is among the Indians, barley both sowne and also wild, whereof they make the best bread that they haue. As for vs Italians (to say a truth) we set most store by rice, wherof (being husked and cleansed) we make grotes, like for all the world to those which other men besides doe make of
C barley husked. The leaues verily that this graine Rice doth beare, be pulpous and fleshy, resembling Porret or Leeks, but that they be broader: the stem groweth a cubit high, the floure is of purple colour, and the root round like a jem or pearle.

Barley [husked] was the most ancient meat in old time, as may appeare by the ordinarie custome of the Athenians (according to the testimonie of *Menander*) as also by the addition or surname giuen to sword-fencers, who vpon their allowance or pension giuen them in barly, were called Hordearij, [*i.* Barley-men.] The ordinarie drie grout or meale also Polenta, which the Greeks so highly commend, was made of nothing els but of barley: and the preparing thereof was after sundrie waies. The manner that the Greeks vsed, was first to steepe the barly in water, and giue it one nights drying, the morrow after they parched or fried it, and then ground it in
D a mill. Others there be, who (when it is well fried and parched hard) besprinckle it once againe with a little water, and then dry it before it be ground. There are some again, who take the ears of barley when they are green, beat & driue the corn out, and while it is fresh and new, cleanse it pure; which don, they infuse it in water, and while it is wet, bray it in a mortar: then, they wash it well in osier paniers, and so let the water run from it; and beeing dried in the sun, they pound or stamp it againe, and beeing throughly husked and cleansed, grind it into meale as is aforesaid. Now when it is thus prepared one way or other, to twenty pound of this barley they put of Line seed three pound, of Coriander seed halfe a pound, of salt about two *ounces and two drams: and after they haue pearched them all well, they blend them together and grind them in a quern. They that would haue this meale to keep long, put vp into new earthen vessels al to-
E gether both floure and bran. But in Italy they neuer vse to steep or soke it in water, but presently parch it, and grind it smal into a fine meale, putting thereto the former ingredients, and the graine of Millet besides.

*Acetabulum.

As for bread of Barley, so much vsed of our forefathers in old time, the posterity that liued after, found to be naught and condemned it: in such sort, as they allowed it for prouender only, to feed their beasts and cattel with. But in stead therof came vp the vse of *husked barly to be sodden for grewel; so highly commended as a most nutritiue and strong meat; and withal, passing wholesome for mans bodie: insomuch as *Hippocrates* (who for skill and knowledge was the prince of all Physicians) hath written one whole booke in the praises onely of it. Now the best Ptisana or husked barley, is that which commeth from Vtica. As for that which wee haue from
F Ægypt, it is made of the flat barley which groweth vpon the eare in two ranks or sides only. *Turannius* saith, That in the realms of Granade, Andalusia, and Africk, the barley wherof the said Ptisane is made, is smooth and naked in the eare without eiles or beard at all. He also is of opinion, that Rice and the graine Olyra, are all one. The manner of preparing husked barley and making Ptisana is so commonly knowne, that I need not to say a word thereof.

*Ptisana.

As

As for Tragum, it is a kind of Ptisane, made of Wheat, after the same order that the former of Barley. Howbeit, there is none of it to be found but in Ægypt and Campaine. Touching Starch-floure called Amylum, it may be made of all kinds of wheat, and of the fine corne Siligo, *i.* Winter wheat: but the principall is that which they make of the three month or summer wheat. We are beholden to the Iland Chios for the invention of Starch: and euen at this day, the very best is that which commeth from thence: called it is in Greek Amylum, because it neuer came into the mill, nor was ground vpon stones. The next to it in goodnesse, is made of a certaine Summer Wheat that is nothing ponderous and weightie. The way to make it, is to steep the wheat within certaine cooperie vessels, made of wood, in fresh water so much as will couer it wel. But it would not be forgotten, that the water must be changed fiue times in a day: and if it were so serued also in the night, it would be the better, to that end, that beeing thus soaked and softened, it might be well mixed and incorporated, yea, and resolued (as it were) into a kind of past, before that it become soure and bitter. This beeing done, it must be laid to drie either vpon linnen cloths, or else in twiggen paniers, that the liquor which is therein may draine away: afterwards vpon tiles, besmeared ouer with some leauen, it is poured forth to take the Sunne, to drie and harden against it. After the Chian Starch, that of Candie is most esteemed and liked of: and lastly, that which commeth out of Ægypt. The good Starch ought to be light, smooth, and euen, and withall, fresh made: for those properties hath *Cato* set downe alreadie.

To returne againe vnto our Barley: the meale thereof is of great vse here with vs in Physick. And that which more is, a straunge effect it worketh in Horses, Asses, and such like labouring beasts: for take Barley when it is dried and hardened at the fire, grind it to meale, reduce it into a paste, and make thereof gobbets: let these be put downe by a mans hand into their bellie, after the manner of cramming Pullen, and you shall soone see, that this food and manner of feeding, shall make the beasts more strong and lustie, and their flesh more fast and compact.

As for Barley eares, some there be which haue but two rankes or rewes: others againe haue more, euen to the number of sixe. In the very graine also there is much difference: for there be many of them longer than other, lighter, shorter, rounder, whiter, blacker, and last of all, enclining to a reddish or purple color. This is the worst of all others for to make drie Grout or Polenta: and as for the white, it is best for that purpose, but will not abide any tempestuous or hard weather. And to say a truth, of all corne, Barley is the softest and tendrest, and will least endure any hardnesse: It would not be sowed, but in a drie and fine ground, laid light, and brought into temper: howbeit, good it must be, and well in heart. The chaffe and pugs that come of Barly, is supposed to be as good as the best: but for straw it hath no fellow, especially to make litter of. Moreouer, in this regard, Barley of all other graine, is least subject vnto blasting, for lightly it is cut downe before Wheat is mieldeawed. And therefore it is, That the wiser sort of husbandmen in the countrey, sow no more Wheat than will serue for the prouision of their house only. Furthermore, they say, that Barley is sowed with the rake, namely, when the mould lightly coureth it: and therefore it commeth vp soonest, and bringeth most encrease and plentie. That which is gathered at Carthage in Spaine, within the moneth of Aprill, is sowed the very same moneth in Celtiberia, so as in one yeare it yeeldeth two crops. It is no sooner ripe, but they make greater hast to cut it downe, and to inne it, than any other corne: for the straw is very brittle, and the huske which contains the grain is as thin and small. To conclude, it is thought to yeeld the better groats if it be taken whiles it is somwhat green, rather than if it should haue the full ripenesse.

Chap. VIII.

¶ That all kinds of Wheat or Fourmenty corne grow not indifferently in euerie place. Also, of other sorts of corne in the Leuant or East countries.

YOu shall not find in all places the same kinds of Wheat: and where you meet with the very same, yet they bear not one name, but haue sundry appellations. The red bearded wheat named in Latin Far, and which in old time they called Adoreum; the winter wheat Siligo, and the

A the ordinarie white Fourmentie wheat Triticum, are the commonest of all others. And indeed these grow all in most countries. As for Arinca it loueth Gaule best, and that is the natiue and proper country for it. Howbeit there is plenty thereof in Italy also. As for Zea, Olyra, and Typhe, there be sundry sorts of wheat and Rie peculiar and appropriate to Ægypt, Syria, Silicia, Asia, and Greece. The Egyptians make of their wheat a kind of floure or sifted meale, but nothing comparable to the Italian. They that vse Zea or Spelt haue not the fine red Wheat Far. And yet we are stored therewith in Italy, and most of all in Campain, where it is called by the generall name of Seed: which name no doubt was giuen vnto it for excellencie and singularitie, as shall be shewed anon more at large. This is the very grain for which *Homer* the poet called the earth, ζειοφόρον, *i.* yeelding the corn Zea: and not because she giueth life to all liuing
B creatures, as some would haue to be meant by that Epithete. Thereof is made also a kinde of starch, but grosser than the former, whereof we spake before: for no difference is there els. Of all kinds of wheat, Far (which is taken for the red bearded wheat) is most hardy, and best resisteth winter cold: it will wel abide the coldest soile that is, and that which is least labored and tilled: it may endure also hot and dry places: it yeelded the first food and meat to our antient forefathers in Latium; as may appeare by this good argument, that publique presents and rewards by way of remuneration were giuen of Far, which they called Adorea, as hath beene said before. Moreouer, that the Romans for a long time liued of a kinde of batter or gruell made of meale sod, and not of bread, is very euident by old records and Chronicles: for euen at this day such thick gruels or pottage be called Pulmentaria in Latine. And *Ennius* a most antient poet,
C when he would expresse the famin of a city that had endured long siege, reporteth, that the parents took by force from their children their sops, notwithstanding they cried pitteously for very hunger. Moreouer, euen in our time wherein we liue, the sacred and ceremonious feasts by vs obserued in memorial of our birth daies and natiuitie, standeth much vpon furmenty, gruel, fritters, and pan-cakes. It seemeth also, that our gruels and such like pottage were as much vnknown to Grecks, as their Polenta or dried groats were straunge to vs here in Italy. There is no corn more hungry and greedy of nourishment than Seed [wheat,] or that draweth more vertue and fat out of the earth for nutriment. As touching the winter grain, called in Latine Siligo, I may be bold to say, it is the daintiest and most delicate wheat that is, for whitenesse, mildnesse, and lightnesse. It agreeth wel with moist countries, such as Italy is, and that part of Gaul cal-
D led Comata, *i.* Lumbardy. Beyond the Alps also in Sauoy only, and the territorie of the Meninians, it will endure and hold the own very well. Mary in other parts of that countrey, within two yeares it turneth into the common wheat. The only remedy therefore is, to chuse forth the heauiest and weightiest cornes, and them to sow.

Chap. IX.

¶ Of Pastry, of Grinding, and of Meale.

THe best manchet bread for to serue the table, is made of the winter white Wheat Siligo, and the most excellent works of pastrie likewise are wrought thereof. And yet in Italie
E it passeth all the rest, in case that of Campain bee blended with another sort which doth grow about Pisæ: for the Wheat of Campaine is redder, but this of Pisæ whiter: and more weighty it is, if it come from a chalky ground, or haue chalk mingled among. Moreouer, this is the ordinary proportion, that of the very pure corn of Campain wheat, which they cal guelded, *i.* wel husked and clensed, a measure named Modius should yeeld four Sextars or quarts of fine meale: but of the vulgar and common grain, which is not so guelded, 5 sextars, and half a Modius besides of bolted floure: and for a courser household bred, which they call the second bread, 4 sextars of meale, and as many of brans. Also of the Pisane wheat, one Modius should yeeld fiue sextares of good meale, and the rest equall to the former. As for the Clusine and Aretine
F wheat, in euery Modius it answereth again six sextars of meale, that is to say, one more than the rest: otherwise they be all alike. Now if you list to range and boult it for cork flower to make bread, ye shall haue of manchet 16 pound, of course household bread three, and halfe a Modius of brans. But this proportion doth not alwaies hold, for it altreth according to the good or bad grinding vpon the mill: for that which is ground dry rendereth againe more meale: but if it be wet or besprinckled with salt water, it maketh the fairer meale, and fuller of fine flower: and

then

then shall ye haue more go away in brans. As for the word Farina in Latine, *i.* meale, it is deriued of Far, which in old time was the best & finest red wheat, as may appeare by the very name that it carieth. Finally, a Modius of meale comming of the French Siligo, called Blancheen, or Ble-blanch, maketh in bread 22 pound weight: but of our Italian, 3 or 4 pound more in bread pan-baked: for what corn soeuer it be, there must be allowance of two pound vantage ouer and aboue, for ouen-baked bread.

Chap. X.

¶ *Of the meale called Similago: of the white flower Siligo. Of other sorts of Meale: and of the maner of baking.*

THe best meale of that kind, which they call in Latine Similago, is made of the common wheat. If the corne come out of Africk, it yeeldeth ordinarily for euery Modius, half so much in ordinarie meale, and fiue sextars besides of flower called Pollen: [for that is the Latine tearme which they vse in the finest of the common wheat Triticum, proportionable to that which in the other winter wheat Siligo, they call Flos. And great vse herof there is in copper-smiths forges, and in work-houses where paper is made.] Ouer and besides, of courser grodgeons for brown bread foure sextars, and as much of brans. Moreouer, the ordinarie proportion goeth thus, that of one Modius of the fine meale Similago, there should be made 122 loues of bread: & that a Modius of the pure flower of Siligo should yeeld 117. As touching the price, thus it goeth commonly in the market one yere with another, when corn is at a reasonable and indifferent rate: A Modius of down-right meale is worth * 40 Asses: but if the meale be sifted and ranged from the grosse brans vntill it be Similago, it will cost eight Asses more: and if it be boulted yet finer to the nature of the fine flower Siligo, the ouer-deale in the price wil be double. Another distinction or difference there was known of this proportion, when a Modius comming of wheat of Similago, was seen to answer 17 pound in bread: and as much of Wheat flower called Pollen, thirtie pound and foure ounces: besides, for second household bread, two pound and a halfe; and of the courseft or browneft as many, and six Sextars ouer and aboue of brans.

* *i.* 2 *sh.* 6 *d.*

But to return to our winter white wheat called Siligo, it neuer ripens kindly & all together, as other corn doth: and for that it is so tender and tickliſh, as that no corn wil lesse abide delay and tarry on worse, great heed must be taken thereof; for so soone as any is ripe, presently the seed sheds and falls out of the eare. Howbeit, lesse danger is it subiect vnto whiles it standeth in the field, than other kindes of wheat, for it beareth alwaies an vpright spike or eare: neither wil it hold and retain that mildew which blasteth corn so much, and turneth it into black pouder. As for that kind of corn which they call Arinca, it maketh the sweeteſt bread: the grain it selfe is more fast & ful than the fine red wheat Far, it carieth a bigger eare, and is besides more ponderous and weighty. Seldom is it seen, that a Modius of this grain maketh full 16 pound. In Greece they haue much ado with it, to thresh it cleane and falter it from the huls and eiles. For which cause *Homer* saith, that they were wont to giue it as prouender to horses, and such labouring garrons; and the very same it is which he calleth Olyra. Howbeit this corn in Ægypt goeth out easily vnder the flaile, is better to grind, and withal yeeldeth better, and is more fruitfull. The Red-wheat called Far is polled wheat [in Ægypt] and carieth no beard or eiles about it. So is the white winter Wheat Siligo, saue onely that which is named Laconica. To these may be adioyned other kinds also, to wit, * Bromos, the poll wheat Siligo, (differing from all the other of that name) and Tragos: strangers all brought from the Levant or East parts, and resembling Rice euerie one. Typhe likewise is of the same kind, whereof in Italy and this part of the world is made that husked corne which goeth among vs for Rice, for it turneth into it. The Greeks haue a kind of wheat called Zea or Spelt: & it is commonly said, that both it and Typhæ (considering that they vse to degenerate and proue bastard) will turne to their kinde again, and become wheat, if they be husked before a man sow them: howbeit this change will not be seen presently, nor before the third yeare. As touching our common wheat, there is no grain more fruitfull than it: this gift hath Nature endued it withall, because she meant thereby to nourish mankinde most; for one Modius thereof sowne, if the soile be good and agreeable thereto (such as lieth about Bizacium, the champian countrey of Africke) will yeeld an hundred

Some take it for a kinde of Barley, or rather Oats.

A hundred and fiftie fold againe. The procurator generall of that prouince vnder *Augustus Cæsar* sent from thence vnto him one plant thereof (a wondrous thing and incredible to be reported) which had little vnder 400 straws springing from one grain & meeting all in one and the same root, as it appeareth vpon records by the letters sent, testifying no lesse. Likewise to the Emperour *Nero* he sent 340 strawes out of the same country, rising all from one onely corne. But to goe no farther than to Sicilie, within the territorie about Leontium, there haue beene certaine fields knowne, wherein one graine putteth forth no fewer than a hundred stalks with ears vpon them: and not there onely, but also in many other parts of that Iland. And this is ordinarie throughout all the kingdome of Granade, and Andalusia in Spaine. But aboue all, the land of Ægypt may make boast in rendring such interest to the husbandmen. Moreouer, of all those
B kinds of wheat which are so plentiful, there is principal account made of that which branches; as also of another which men call Centigranum, *i.* the wheat that beareth 100 graines.

To leaue this kind of graine, and to come to Pulse: there hath been found in Italie, and goe no farther, one beane stalke laden with an hundred beanes. Touching Summer corne, to wit, Sesama, Millet, and Panicke, we haue alreadie spoken. As for Sesama, it commeth from the Indians, whereof they make a certaine kind of oile. The color of this graine is white. Like vnto it there is another grain called Erysinum, which is rife in Asia & Greece: and I would say it were the very same, that with vs in Latine is named Irio, but that it is more oileous and fatty; and indeed to be counted a medicinable or Physicall plant, rather than a kind of corne. Of the same
C nature, is that which the Greekes call Hormium: it resembleth Cumin, and is vsually sowed with Sesama: howbeit no beast will eat thereof while it is greene, no more than they do of Irio aforesaid.

To come now to the manner of husking and cleansing of corne: the feat is not so easily done in all, as in some; for in Tuscane, they take the eares of their red wheat called Far, when they be parched and dried at the fire, they pound or bray them with a pestill headed at the nether end with yron, or els fistulous and hollow within, yet bound about with a hoop or ring of yron, and the same withinforth toothed in manner of a star; so as if they be not heedfull in the stamping, the yron-work at the pestill end will either cut the cornes in two, or else bruise and break them cleane. In Italy (for the most part) they vse a reed or plain pestill, not headed with yron, to huske and dresse their corn; or els certain wheeles that are turned and driuen apace with water, which
D going very swift doe also grind the said corne. But since we are fallen into this treatise concerning husking and grinding of corn, it shall not be amisse for to set down the opinion and resolution of *Mago* in this behalfe: First, for common wheat he giueth order, that it be well steeped and soked in good store of water; afterwards, to be rid from the hulls and eiles that it hath, in a mortar: which done, it ought to be dried in the sunne, and followed a second time with a pestil. In like maner (saith he) should barley be vsed: howbeit, two Sextars or quarts of water will be sufficient to be sprinckle and wet twentie Sextars of barly. As for Lentils, he would haue them first parched and dried, and then lightly punned or stamped together with brans; or els to put vnto twentie Sextars thereof, a fragment or peece of a broken semeld brick, and half a Modius
E or peck of sand. Eruile would be cleansed or husked as Lentils be: but Sesama, after it hath bin infused or soked in hot water, he saith, ought to be laid abroad a sunning; then to be rubbed hard together, and afterwards to be put into cold water and therewith couered, so as the huls or chaffes do flote and swim aloft: which done, to be laid forth a second time in the sun vpon linnen clothes, for to drie. Now if all this be not don one thing after another and dispatched with the more speed and hast, it wil soone vinew or catch a mouldinesse, and besides lose the bright
F natiue hew, and looke wan and of a leaden colour. Now, say that corn be cleansed and husked, some one way and some another, it is ground afterwards in diuers sorts. If the eares be bolted by themselues alone for gold smiths worke, the chaffe comming thereof is called in Latine, Acus; but if it be threshed and beaten vpon a paued floor, eare, straw, and al together (as in most parts of the world they vse to doe, for to fodder cattell and to giue in prouender to horses, then it is
G tearmed Palea: but the refuse or chaffe remaining after that Panick or Sesama be clensed, they call in Latine Appluda, how soeuer in other countries it be otherwise named.

To speake more particularly of Millet, there is great store thereof in Campaine, and there they set much by it, for of it they make a kind of white grewel or pottage: also the bread thereof
H is passing sauorie and sweet. The Tartarians also & nations in Sarmatia, feed most of this water

gruell made with Millet: as alſo with the crude and raw meale thereof vnſodden and vnbaked tempered with mares milk, or els with horſe-bloud that runneth out of their maſter leg-vains, by way of inciſion made for the purpoſe with the phleame. As for the Æthiopians, they know no other corne but Millet and Barley. Panicke is eaten in ſome parts of Gaule, and principally in Aquitane or Guien: in Piemont alſo, and all about the Po, it is a great feeding, ſo there bee beanes among; for without beans they cannot skill how to dreſſe any thing for their daily food. The regions that confine vpon the Euxin ſea or Pontus, haue no daintier meat than that which is made of Panick. To conclude, all Summer corn abouenamed, delight more to grow in moiſt and watery grounds, than to be wet with ſhowres and raine from aboue. And yet I muſt needs ſay, that Millet and Panick care leaſt for water or moiſture, when they begin to put forth their blade. Laſt of all, there is no good husbandman but wil forbid to ſow Millet and Panick either in vineyards, or among trees that beare fruit; being perſuaded, that the ſowing thereof doth eat out the heart of the ground.

Chap. XI.

¶ *Of Leuains: the manner of making bread: ſundrie kinds of bread: about what time Bakers were firſt knowne at Rome: of Sieues and Serces, of Rangers and Bulters. Laſt of all, of the Frumentie called Alica.*

THe meale of Millet is ſingular good for Leuains, if it be wrought and incorporat in new wine, for ſo it may be kept a whole yeare. The like is made of the better brans of wheat, ſo they be ſmall, fat, and not to neer raunged; and the ſame be kneaded in new white wine of three daies old, and then dried in the ſunne. Hereof is made a dough or paſt, and the ſame is reduced into certain round cakes or Troſches to ſerue for the making of bread; for theſe muſt be ſoked and diſſolued in hot water with the floure of the corn Zea, and therein be ſodden, which don, they vſe to mingle it with the meale and floure to make paſt of, which they hold to be the beſt way of making bread. The Greeks haue ſet down this proportion, allowing to euery pecke or Modius of Meale, 8 ounces of leuaine; and this they thinke to be ſufficient. Now theſe kinds of leuains verily cannot be made, but only in time of vintage. But if a man would make leuaines at any other time, he may take of barly meal tempred with water ſo much as it may be brought into a paſt; and when there be certain lumps or cakes herof made, weighing two pound apeece, they muſt be baked either vpon the hearth vnder hot embres, or els in an earthen pan ouer the coles, vntill ſuch time as they looke brown and red withal. Afterwards they be put vp cloſe couered in pots or ſuch like veſſels, & there remain vntil they wax ſower. Now when a man would vſe leuain, herof he taketh what he will, and diſſolueth it as is aforeſaid. In old time when they made barley bread, they vſed no other leuain for it but only the meale of Eruile or Cich peaſe; and ordinarie it was, to take two pound thereof for * two peckes and an halfe of meale: but now adaies the order of our huſwiues is, to make leuaines of the very ſame meale which is kneaded and wrought into dough, before ſalt be put therto, which they ſeeth tothe conſiſtence of a pulp or thicke batter, and ſo let it lie vntill it become ſowre. And yet commonly they doe not boile their leuains but only reſerue ſome of the paſt or dough, wherof they make their bread the day before. As touching the nature of Leuain, certain it is that it proceeded of ſoureneſſe, like as it is generally held, that they be ſtronger of bodie who feed of leuained bread: for in old time it was verily thought, that of the weightieſt and heauieſt kind of wheat, there was made the holeſomeſt bread.

* quinque ſeſtertios.

Concerning the ſundrie ſorts of bread that is made, it ſeemeth a needleſſe peece of work to ſet them down euery one in particular: for ſometimes bread taketh the name of the meats and viands that be eaten therewith: as for example, Oiſter-bread, ſo called for that it was good with oiſters: otherwhiles it bears the name of ſome daintie cates, as Artologanus, [*i.* pancake, fritter, or fine cake bread.] As for the bread called Speuſticus, [*i.* Haſtie] it is ſo called, becauſe it was made in haſt. The manner alſo of the baking giueth denomination to ſome bread, as to Furnaceus panis, which was made in a furnace; to Artoptitius, made in a baking-pan called Artopta: as alſo to that which was baked in an ouen. Not long ſince alſo there was a new deuice of making bread brought out of Parthia, which becauſe the paſt is drawne through water (and yet a ſpungious, light, and hollow ſubſtance it carries) they call water-bread, and giue it the denomination

A nation of Parthicke bread. But how ſoeuer it be, the beſt bread is of the fineſt wheat floure, that hath paſſed through a ſmal tamis bulter. Some countries there be, that knead their dough with milke or egs; others alſo put butter thereto: but thoſe be ſuch nations as are not troubled with wars, ſince that they can haue while to ſet their minds on ſundry ſorts of paſtry. The Picenes in times paſt inuented away by themſelues of making bread, with the very matter or ſubſtance of the frumentie Alica; and ſurely that deuiſe holdeth ſtil and is much vſed. The manner thereof is this: They take the ſaid frumentie paſt and ſteep it in water nine daies, on the tenth day they work or knead it with the juice of Raiſons, to the faſhion of the Parthick cake driuen thin and broad, after this they put it into earthen pots, ſet them in ouens for to frie & bake, that the ſaid pots may there breake in ſunder: and beeing thus hard baked, it is not to be eaten vnleſſe it be

B ſoked in ſome lipuor, which ordinarily is milke, or mead eſpecially.

There were no Bakers known at Rome for the ſpace of 580 yeres after the foundation of the citie, vntill the Perſian warre. Before that time euery Roman citizen had his owne bread baked at home, and womens work commonly it was, like as at this day it is in moſt countries: for this appeareth by *Plautus*, who in his Comœdy entituled Aulularia, maketh mention of * Artopta, a baking pan [which men haue vſually in their houſes:] and hereupon is growne much diſpute and controuerſie betweene learned men about this Queſtion. Whether that verſe were of that Poets making or no? for certain it is (acording to the opinion of *A. Atteius Capito*) that at ſuch mens bourds as kept great houſes and delicate fare, there was no other bread eaten but ſuch as

C Cookes were wont to make them, after the maner of ſimnels: for Piſtores were thoſe only then called, who husked and cleanſed the bearded red wheat named in Latin Far; and others Bakers than they, were there none. Neither had the Romane citizens in ordinarie, any Cookes as their houſhold ſeruants, but hired them out of the market whenſoeuer they had any meat to dreſſe.

* *Ego hanc Artoptam ex proximo vtendam puto.*

Diuers ſorts of ſieues and bulters there be. The Sarce made of horſe haire, was a deuiſe of the Frenchmen: the tamis raunger for courſe bread, as alſo the fine floure boulter for manchet, (made both of linnen cloth) the Spaniards inuented. In Ægypt they made them of Papyr reed and ruſhes. But now that we are entred ſo far into this matter as touching corne, I thinke it not amiſſe before I proceed any farther, to ſpeak (with the firſt) of the frumentie called Alica, and the manner thereof being (as it is) ſo excellent and wholſome to be eaten, and which, no doubt, throughout all Italy, bears the name for the very beſt of all corne whatſoeuer. No queſtion, but

D there is made thereof in Ægypt; howbeit nothing to the other. In Italy, many places there be where it is to be had, as namely in the territories of Verona and Piſæ: but that of Campain carieth the price and praiſe aboue all the reſt: a champion or plaine countrey this is; for the ſpace of forty miles lying as a vale vnder the hils and mountaines, ſubject to watery clouds and tempeſtuous winds. The ſoile of this whole tract (to ſpeake directly of the nature thereof and deſer no longer) is light and duſtie, if a man reſpect the vpper coat thereof, but vnderneath it drinks in much moiſture, whereunto apt it is by reaſon of certain fiſtulous porofities therin, like a puniſh ſtone: in which regard, the mountaines commanding theſe plaines (ill neighbors otherwhiles) do it much good and mend the ſoile very well; for many a ſound ſhowre, which ordinarie falleth from the hills) paſſeth and runneth through it, as it were a colander; by means wher-

E of, the ground ſtandeth not drenched and ſoked with water, but is thereby more pliable & eaſie to be tilled. Now this ſoile hauing thus receiued ſtore of water, doth not yeeld it vp again boiling out at any ſprings, but keepeth and cheriſheth it ſtill within, as it were the radical and nutritiue humor, concocting the ſame to a very good temperature. All the yere long a man ſhall ſee it ſown and ſtanding with corn, one or other; for the ſame ground bears one crop of Panick. and two of the red wheat Far: it neuer reſteth but beareth ſomwhat: for ſay that ſome lands lye fallow between-while, and are not ſowed with corn; they yeeld roſes in the ſpring of themſelues naturally, and thoſe far ſweeter than the garden roſes: ſo fruitful is it and canot abide to be idle and do nothing. Heruponaroſe the prouerb of this land of Campaine, *That greater ſtore is there to be found of ſweet perfumes and odoriferous ointments, than of ſimple oyle in other countries whatſoeuer.*

F And looke how much this tract of Campaine ſurpaſſeth all other lands in goodneſſe and fertility, ſo much excelleth one quarter therof (called in Latin Laboriæ, and by the Greeks Phlegræum) all the reſt, and goeth beyond it ſelfe. This plain aforeſaid named Laboriæ, is confined on both ſides with the great cauſeis or high waies raiſed by the Conſuls, and thereupon called Conſulares; the one goeth from Puteoli, the other from Cumes, and lead both to Capua.

But to come againe vnto our Frumentie Alica, made it is of the graine Zea, which before we G
tearmed by the generall name of Seed. This corne for to make Frumenty, is to be pound in a
wodden morter, when it should be cleansed from the huske: for if a man beat in one of stone,
the hardnesse thereof would bruise and breake it. The best way of cleansing and husking it, is
with a pestill, such as bondslaues and prisoners do vse to stamp withall, and to work by task for
their punishment: in the forepart therof it hath a circle of yron, made in fashion of a round Box:
wherewith after the corne is drawn naked out of the husk, the very same instrument serueth a-
gain to stamp and bruise the white marrow and floure thereof within. And thus by this means
there be three sorts of Alica or Fourmentie aforesaid. The finest, which is the best: the meane,
which is the second: and the greatest or grossest, which the Greekes call Aphærema.

When all this is done, yet haue they not that whitenesse of their owne, for which cause they H
are so much esteemed; as namely, those that are come now adays from Alexandria, which are ta-
ken to be the best and to excell all other. And therfore there is chalk (a wonderfull thing to be
spoken) mingled afterwards and incorporate therwith, and so by that means the Frumenty be-
comes white and tender withall. Now this chalke or plaistre is found between Puteoli and Na-
ples, in a little hill which thereupon is called Leuco-gæon, [*i.* white earth.] And in truth when
Augustus Cæsar, late Emperor of Rome, erected a colonie at Capua, and peopled it with Roman
citizens, he assigned vnto the Neapolitanes (by vertue of a decree, now extant) an yerely rent or
pension of twentie thousand deniers to be paid out of his owne treasure, in regard of the chalk
which came from the hill aforesaid, being within their territorie and seignorie. He rendereth
also a reason inducing him thus to do, Because the inhabitants of Capua, alleadged, that they I
could not make good Alica or Frumenty without that mineral of chalke. In the same hil there
is also found a Brimstone mine, and out of the veines thereof, fountaines springing, called O-
raxi, the water whereof is singular good to cleer the eies, to cure and heale green wounds, and to
fasten the teeth that are loose in ones head.

As touching a bastard kind of Frumenty, it is made verily for the most part of a Speltor Zea
in Affrick, which there doth degenerat and grow out of kind. The ears that it carieth, are broa-
der and blacker than the other, and the straw is but short. They vse to cleanse and huske it by
stamping or braying it together with sand, and for all that deuise, much ado they haue to fetch
off the huls and huskes wherein the graine lieth enclosed: now when it is thus cleansed and na-
ked, it is not past halfe as much in measure as it was before. Which done, there is a fourth part K
of plaistre strewed & mingled among: and when al is together, they sift it down through a meal
sieue. That which remaineth behind and passeth not through, is the grosseſt part thereof, and is
called in Latine Exceptitia. That which was thus searced, is driuen againe through a narrower
and finer sieue, and those groats that tarie in the ranger, the call Secundaria. In like manner doe
they a third time, searcing it through so fine a sieue, that nothing can passe but the very small
sand and pouder: and this last kind of Frumenty gurts they name Cribraria. Another way there
is besides in all places practised, to sophisticat, and counterfeit the right Frumenty groats in-
deed: They chuse out of our common Wheat, the faireſt, fulleſt, and whiteſt grains, which bee-
ing half sodden in an earthen pot, they lay out afterwards in the Sun, till they be as drie as they
were at first: which don, they lightly sprinckle some water ouer, & then bruise them in a quearn L
mill. Fairer Frumentie groats be made of Zea than of Wheat, and called it is Granum or Gra-
natum, although in Alica that be counted a fault. To conclude, they that wil not vse chalk, do
blanch and make their Frumentie white by seething milke with it, and mingling all together.

Chap. XII.

¶ *of Pulse.*

IT followeth now to write of the nature of Pulse, among which, Beanes do challenge the first
ranke and principall place: for thereof men haue assaied to make bread. The meale of Beans
is called in Latine Lomentum. There is not a Pulse weigheth more than it, and Beane meale M
makes euery thing heauier wherin it is. Now adaies they vse to sel it for prouender to feed hor-
ses. And indeed Beanes are dressed and vsed many waies, not only to serue all kind of four-foo-
ted beasts, but also for man especially. For in most countries it is mingled with Frumentie
corn: and namely with Pannicke most of all, whole and entire as it is: but the more delicat and
daintie

A daintie way is to break and bruise it first. Moreouer, by ancient rites and religious ceremonies,
at the solemn sacrifice called Fabraria, the maner was to offer vnto certain gods and goddesses
Beane cakes. This was taken for a strong food, being eaten with a thick grewel or pottage; how-
beit, men thought that it dulled a mans sences and vnderstanding, yea, and caused troublesome
dreames in the night. In regard of which inconueniences, *Pythagoras* expreſſely forbad to eat
Beanes: but as some haue thought and taught, it was because folke imagined, that the soules of
such as were departed, had residence therein: which is the reason also, that they be ordinarily
vsed and eaten at the funerals and obsequies of the dead. *Varro* also affirmeth, That the great
Priest or Sacrificer called the Flamine, abstains from Beanes both in those respects aforesaid;
as also for that there are to be seen in the floure thereof certain letters or characters that shew
B heauines and signs of death. Further, there was obserued in old time a religious ceremonie in
Beanes: for when they had sown their grounds, their maner was, of all other corne to bring back
with them out of the fieldes some Beanes: for good luck sake; presaging thereby, that their
corne would returne home again vnto them; and these Beanes thereupon were called in Latine
Refriuæ, or Referiuæ. Likewise in all port-sales it was thought, that if Beanes were enterming-
led with the goods offered to be sold, they would be luckie and gainefull to the seller. This is
ceratained, that of all the fruits of the earth, this only will be full and sound when the Moone is
croissant, notwithstanding it were gnawne and halfe eaten with some thing before. Set them o-
uer the fire in a pan with sea water or any other that is saltish, they will neuer be thoroughly
sodden. They are set or sowne before the retrait of the Starre Vergiliæ, [*i.* the Brood-hen] the
C first of al other Pulse, because they might take root betimes and preuent the Winter. And yet
* *Virgill* would haue them to be put into the ground in the Spring: like as the manner is in Pie-
mont and Lombardie, all about the riuer Po.

* *Vere fabis satio, Georg. lib.*

But the greater part of good Husbandmen are of this opinion, That the stalke or straw of
Beanes sowne early or set betimes, are better than the very fruit it selfe, which hath had but
three months being in the ground. For the cods and stalks only of Beans are passing good fod-
der and forage for cattell. Beanes when they are blooming, and in their floure desire most of al
to be refreshed with good store of rain: but after they haue don flouring, they care for little: the
sowing of this Pulse in any ground, is as good as a mucking vnto it, for it enriches it mightily.
And therefore towards Macedonie and about Thessalie, the manner is when Beanes begin to
D blossom, for to turne them into the ground with the plough. Beans come vp and grow in most
places, of their owne accord without sowing; and namely, in certaine Ilands lying within the
Northern ocean, which our countrymen thereupon haue named Fabariæ. Semblably, they grow
wild commonly thoroughout Mauritania, but exceeding hard and tough they be, and such as
possibly eanot be sodden tender. There are likewise in Ægypt to be found Beanes, with a stalk
beset full of prickles or thornes: which is the cause that Crocodiles wil not come neer them, for
feare of hurting their eyes. The stemme of these Beanes is foure cubites in height, but exceed-
ing thicke and big withall: tender it is notwithstanding, and soft, running vp euen and smooth
without any knots or joints at al, it caries a head in the top like Chesboule or Poppy, of a rose-
red color: wherin are contained not aboue 30 Beanes at the most. The leaues be large: the fruit
E it selfe (or the Bean) is bitter in tast, and the smel not pleasant: howbeit the root is a most dain-
ty meat, which the inhabitants do eat as wel raw as sodden; and like it is to reed & cane roots.
These grow in Syria and Cylicia, as also about the lake Torone, within Chalcis.

Much like to the prouerbe here in England, *March Ote straw is better than Aprill Otes.*

As touching other Pulse, Lentils be sown in Nouember, and so are Pease, but in Greece on-
ly. Lentils loue a light ground better than a fat & heauie: they like also drie and faire weather.
Two kinds thereof be found in Ægypt: the one more round and blacke than the other, the rest
be fashioned as common Lentils. According to the manifold vse and diuers effects of Lentils,
there haue sundrie names and denominations beene borrowed from them: for I find in writers,
that the eating of Lentils maketh men to be mild and patient, whereupon they be called Len-
ti and Lenes. As for Pease, it ought to be sowed in warm places lying well vpon the Sunne: for,
F of all things it cannot abide the cold. Which is the cause, that in Italie and in other countries
where the clime is tough and hard, they are not sowne vsually but in the Spring, and folke chuse
a gentle, light, and loose ground.

To come now to the Cich pease, the nature of it is to be nitrous and saltish, and therefore it
burneth the ground where it grows. Neither must it be sowne, vnleſſe it were well steeped and

soked in water the day before: many sorts there be of these cich-pease, different in bignes, form, colour, and taste: for there are both blacke and white, and those in fashion shaped like to a Rams head, and therupon they are so called. There is a second kind named Columbinum, or by others Venerium. These are white, round, light, lesse than the former Rams-head ciches, which men do eat ceremoniously with great religion, when they meane to watch thoroughly all night long. There is a little cich pease also, called Cicercula, made cornered and otherwise vneuen, like vnto a Pease. But the best ciches and most pleasant are those that come neerest in resemblance to the Bruile: and generally the red kind and the black are more firm and fast than the white: cich pease grow within round cods, whereas other Pulse he contained in long and flat, according to the forme and figure of the seed which they hold: Pease by themselues haue a long round cod in forme of a Cylinder.

The Pulse called Phaseoli, [i. Kidney Beans] vse to be eaten cod and al together. These may be set or sowne in what ground you list, from the Ides of October to the Calends of Nouember. Finally, all kinds of Pulse, so soone as they begin to ripen, are to be gathered or plucked hastily: for stay neuer so little, they leape out of their cods, and shred, and being once fallen, they lie hidden in the ground; like as the Lupine also.

Chap. XIII.

¶ *Of Rapes or Neuewes: of Amiternum Turneps.*

NOw let vs proceed and passe to other matters: and yet in this discourse, it were meet to write somwhat as touching Rapes or Nauews. The Latin writers, our countreymen, haue slightly passed by and touched them only by the way. The Greeks haue treated of them somwhat more diligently, and yet among pot-herbes and worts growing in gardens; whereas indeed according to good order they would be spoken of immediatly after Corne, or Beanes at least wise, considering there is not a plant of more or better vse than is the Rape or Nauew. First and formost, they grow not only for beasts of the earth and the Foules of the aire, but also for men. For all kinds of Pullen about a Farme-house in the countrey, doe feed vpon the seed thereof as much as of any thing else, especially if they be boiled first in water. As for four-footed beasts, they eat the leaues thereof with great delight, and wax fat therewith. Last of al, men also take as great pleasure and delight in eating the leaues and heads of Rapes or Nauewes in their season, as they do of young Coly-flories, Cabbages, or any tender crops of herbs whatsoeuer; yea, when they are faded, flaggie, and dead in the Barn, they are esteemed better, than being fresh and green. As for Rapes or Nauewes, they will keep long and last al Winter, both within the ground where they grew: and being well wintered, they will continue afterwards out of the earth lying abroad euen almost till new come: so as they yeeld men great comfort to withstand hunger and famin. In Piemont, Lombardie, & those countries beyond the Po, the people make the most account of gaine by gathering Rapes, next to wine vintage and corne harueſt. It is not choise and daintie, of the ground where it will grow: for lightly it wil prosper where nothing els can be sowed. In foggy mists, hard frosts, and other cold weather, it thriues passing wel, and grows to a wonderfull bignes. I haue seene one of their roots weigh aboue fortie pounds. As touching the handling and dressing of them for our table, there be many waies and deuises to commend and set them out. Preserued they may be till new come, specially condite with sharp and biting Senuie or Mustard seed. Moreouer, our Cooks know how to giue them six other colours besides their owne which is pure and naturall; they haue the cast to set euen a purple hew vpon them. And to say a truth, there is no kind of viands besides that, being thus painted & coloured, hath the like grace. The Greeke writers haue diuided them by the sexe, and therby made two principal kinds therof, to wit, the male and the female. Nay, more than that, out of one and the same seed, according as it is sowed, they can make male or female, whether they please. For if they sow thicke, and chuse therto a hard and churlish ground, it will proue of the male kind. Also, the smaller that the seed is, the better it is esteemed. But of al Rapes male or female, three especiall sorts there be & no more. For some roots spread flat and broad, others are knit round like a ball; the third sort that runs downe into the ground with a long root in manner of a Raddish, they cal the wild Rape or Nauew: this bears a rough leafe and ful of angles or corners; the iuice that it yeelds is sharp, hote, and biting, which being gathered in harueſt time & reserued, mundifieth the eies, and cleareth the sight, especially being tempered with breſt-milke. If the weather be cold, they are thought not only to thriue in bigneſſe of the root, but also to prooue the sweeter, whereas contrariwise in a warm season they run vp all to stalke and leafe. The best simply are those that grow in the Nursine territory. For they are sold by the weight: and euery pound is worth a Roman Sesterce, yea, and otherwhiles twaine, if there be any scarcity of them. Next to these in goodnes be those that come out of Algidum. Thus much of Rapes & Naueus.

As for the Turneps of Amiternum, they be in a manner of the same nature that the Rapes aforesaid, & cold they loue as well. Sown they are before the Calends of March; & foure quarts of their seed will take vp a whole acre of ground. The best Husbandmen, and such as are more exquisite in their practise of Agriculture, giue order, That the ground for Turneps should haue fiue tilthes, whereas Rapes or Nauewes are content with foure: but both the one and the other had need of a soile well inriched with dung or compost. By their sayings also, Rapes will prosper the better and come vp thicker, if they be sowed in their huls, chaffe and all together. Moreouer, they would haue the seeds-man to be naked when he sowes them, and in sowing to protest, that this which he doth is for himselfe and his neighbors, and withall to pray as he goeth. The proper season for the seedneſſe of them both, is between the feasts of the two gods; to wit, *Neptune* and *Vulcan*.

To conclude, there is a subtill and curious obseruation that many go by and do hold, namely this, To marke how many daies old the Moon was, when the first snow fel the winter next before; for if a man do sow Rapes or Turneps, within the foresaid compasse of that time, the moon being so many daies old, they will come to be wondrous great, and increase exceedingly. Men vse to sow them also in the Spring: but then they make choise of moist and hot grounds.

Chap. XIIII.

¶ *Of Lupines.*

AFter Rapes and Turneps, the Lupines haue greatest vse, and serue to be raunged next: for that they indifferently serue both men and also all foure footed beasts that be housed, either whole or clouen. Now for that the stalke is very shittle in mowing, and therefore flyeth from the edge of the syth, the onely remedie therefore (that the mower may catch it) is to goe to worke presently after a good shower. And verily there is not a plant growing vpon the earth (I meane of such as are sowne of seed) more admirable than the Lupine, in regard of the great amity and sympathie betweene the earth and it. Looke how the Sun keepeth his course in our Horizon aboue, so doth it turne and go withall; insomuch as the Husbandmen of the countrey go by no other clocke to know how the day passeth, in close and cloudie weather, than this obseruation. Moreouer, it hath three seasons of blowming: it loueth the earth well, but yet willingly it would not be couered ouer with mould: for this is the onely seed that is sowne vpon ground without any ploughing or digging: it would grow to chuse, in a most grauelly, drie, and sandy soile; and in no case can it abide any tending or husbandry about it: so affected is it to the earth, that cast it vpon any rough ground, among bushes, leaues, briers and brambles, it will chit and spurt neuertheleſſe, & neuer lin til it take root within the earth. If Lupines be sowed either in vineyards or vpon corne lands, they inrich the same and make the ground better, as we haue before written: and so little need haue they of dung, that they stand in stead of the very best. To say a truth, there is no graine lesse chargeable to be sowne, than it; nay there is none costeth nought at all, but it; for it needeth not so much as to be brought into the field: and why? it soweth it selfe presently in the same field where it grew: and shedding as it doth of the own accord, a man neuer needs to cast and throw it vpon the land, as other corne. It is first sowne, and last gathered: and lightly both these seasons fall out in the moneth of September, for if the Seed-nes preuent not the winter, so as it may haue good root before it commeth, it will be in danger of the cold. Ouer and besides, if it chance to lie bare and vncouered aboue-ground, left careleſſely without any keeping, and that no raine come vpon it presently for to driue it into the ground, it is safe enough and catcheth no harme; for so bitter it is, that no liuing creature will touch it: and yet for the most part the husbandmen bestow a light furrow vpon it, and so couer it verie shallow. If the ground be fast and heauie, it loueth that best which standeth vpon a red clay. And for the maintaining and inriching of this kind of soile, it must be turned vp or eared after

after the third flouring;but in caſe it be grauelly or ſandy,it wil ſerue to do it after the ſecond. Chalkie grounds onely and myrie it hateth,and therein it wil not grow. As bitter as otherwiſe it is,yet if it be ſteeped and ſoked in hot water,it is mans meat alſo. Moreouer,one Modius,or peecke of Lupines is ſufficient for to ſatisfie and feed an Oxe or a cow at a time:and this kind of prouender will make beaſts ſtrong and healthfull. Moreouer, the meale of Lupines applied to the bellies of yong children that haue the wormes,is a ſingular remedy. For the good keeping of Lupines,all men agree that they ſhould be laid vp in ſome chimney or ſmokie place eſpecially;for if they lie in a moiſt roome,there be certain little worms that wil nibble off and eat the tip or nauill that it hath,and by that meanes marre it for euer ſprouting againe. Finally, if Lupines be eaten downe by beaſts,while they be greene in the leafe, the ground where they grew muſt preſently be ploughed vp.

Chap. XV.

¶ *Of Vetches and Eruile.*

VEtches alſo do manure and fat the ground where they be ſowed;neither be they chargeable or ſtand the husbandman in much:they be ſown with one tilth;otherwiſe there needs no harrowing nor weeding : there is required no mucking ; onely they would be couered with mould and the clods broken;for ſowing of vetches,there be three ſundry times;firſt,about the ſetting of the ſtar Arcturus,that by the moneth of December it may get a good head for to be eaten with beaſts;and it is generally holden,that being ſowne in this ſeaſon,it will bring the beſt ſeed;for ſay it be eaten downe then,it will carry the burden neuertheleſſe:the ſecond Seedneſſe is in Ianuarie: the laſt in March;and being then put into the ground,it will run vp moſt to blade, and yeeld the beſt forrage for cattell. Of all ſeeds that are caſt into the earth, it loueth drought moſt : it can brooke alſo ſhadie places well enough. The chaffe that commeth of the ſeed thereof,is excellent good;and better than any other,in caſe it were ripe when it was gathered. It robbeth vines of their nouriſhment,if it be ſowed neere thoſe trees wherto vines are wedded;inſomuch as a man may ſee euidently how they languiſh.

As touching Eruile,it asketh no great hand or trauell about it : yet thus much more attendance it requireth than Vetches,for that it muſt be weeded and grubbed about the roots. Beſides,this kind of Pulſe is of great vſe in Phyſick;for *Auguſtus Cæſar* was cured of a diſeaſe that he had,and recouered his health by the meanes of Eruile, as himſelfe reporteth in ſome of his letters now extant. Moreouer, fiue Modij or pecks of Eruile ſown, is ſufficient to maintain and find a yoke of oxen. As for that which is ſowne in March,it is hurtfull forage(men ſay) for kine and oxen:as alſo that which is ſowne in Autumne,maketh beaſts heauie and ſtuffed in the head: but that which is put into the ground in the beginning of the Spring is harmleſſe.

Chap. XVI.

¶ *Of Fœnigreeke : of Rie : of Dredge : of the prouender corne or Bolimong Ocymum : of Spaniſh Trefoile or horned Clauer-graſſe,called in Latine Medica: of the ſhrub Trifoile,named Cytiſus.*

FOr the ſowing of Silicia or Siliqua,otherwiſe called Fœnigreeke, there needs no more but to ſcarrifie or ſcrape it lightly vp with a furrow not aboue foure fingers breadth deepe ; for the leſſe coſt and husbandry that is beſtowed about it,and the worſe that it is vſed, the better it proſpereth and yeeldeth greater increaſe : a ſtrange thing to be ſpoken and ſeldom verified,*That Negligence ſhould be any waies profitable*;and yet herein it prouoeth true. That which is called Secale and Farrago in Latine,(*i.* Rie)needeth no more adoe but to be harrowed & the clods well broken. There is a kinde of Secale or Rie, which the people called Taurines dwelling vnder the Alpes doe call Aſia : it is ſimply worſt of all other, and good for nothing but onely to driue away hunger:plentifull enough this corne is and yeeldeth good increaſe, but the ſtraw is ſlender:blacke it is and of an vnpleaſant colour, howbeit exceeding weightie and ponderous : they vſe to mingle the red wheat Far therewith,and make thereof a Maſcelline,to allay the bitterneſſe thereof;and yet for all that,the bread which it maketh is moſt vnſauorie to the mouth and ill for the ſtomack. It wil come vp in any ground what ſoeuer,and bring forth a hundred fold ordina-

ordinarily ; neither doth it eat the ground out of heart, but rather maketh it more battle, and ſerueth in ſtead of compoſt or mucke.

As for that kind of dredge or farrage which commeth of the refuſe and light corne purged from the red wheat Far,it ought to be ſowne very thicke,with Vetches otherwhiles mingled among. In Africke,the ſame mixture is made of Barley. All theſe are good onely for prouender and beaſts forage:as alſo a baſtard kind of Vetches called * Cracca,which pigeons loue ſo well, that if they be fed once therewith, they will neuer leaue the place where they taſted it, nor flie far from thence. In time paſt our anceſtors had a kind of fodder or prouender, which *Cato* called Ocymum,wherewith they *vſed to ſtay the gurrie in kine and oxen. This forrage was made of *beane ſtalks cut downe greene as it ſtood before it was iointed and codded. But *Sura Manlius* taketh this dredge to be another thing,ſaying,that in old time they vſed to put vnto ten Modij of beanes,two of Vetches,and as many of Eruile,and ſo were wont to blend al together and ſow them in an acre of ground at the fall of the leafe;and (ſaith he) it would be the better balimong if there were ſome Greek Otes mingled withall,ſuch as neuer ſhed the ſeed out of the haw:this manner of dredge was called vſually Ocymum,and was woont to be ſowne for a kind of forrage to ſerue kine and Oxen. *Varro* ſaith,that it tooke that name becauſe it commeth vp ſo ſpeedily as being deriued from the Greeke word ὠκὺς , which ſignifieth, Quicke, or Swift.

As for that graſſe or herbe Medica (a kind of Clauer or Trefoile) the Greekes held it in old time for a meere ſtranger,as being brought into Greece from Media during the Perſian warres, which king *Darius* leuied againſt Greece : howbeit,an excellent Simple it is,and worthie to be written of in the firſt place. And to begin withal,this ſingular property it hath,That with once ſowing,it continueth aboue thirty yeares without any need of renewing. Like it is to Clauer or three leaued graſſe, both in leafe and ſtalke, but that the ſtemme is parted by knots and ioints. Moreouer,as it riſeth higher and runneth vp in the ſtalke, the leaues grow narrower:of this herb alone and of Cytiſus,*Amphilochus* compiled one whole book;howbeit, he wrote of them both confuſedly. The ground wherein it is to be ſowed,after it is well rid of ſtones and cleanſed, muſt be broken vp and well tilled in the fall of the leafe. Soone after it needeth to haue another fallow and be harrowed withall, and then couered with hardles : this would be done two or three times (fiue daies between) and therewith it ought to be throughly dunged. This herb requireth a ſound dry ground,and yet ſuch as is full of ſucculent moiſture within, or elſe where water is neere at hand to command. The ground being thus prepared, ought to be ſowed in the moneth of May following,for otherwiſe the froſt would take it and marre all. Moreouer, requiſite it is, that it be ſowed very thick,ſo as euery place be taken vp therewith,thereby to exclude all other weeds and giue them no roome there to grow. To this effect therefore euery acre will take 20 Modij or pecks of ſeed. But take heed withall, that it be not burnt ſo ſoon as it is put into the ground,& therfore immediatly it muſt be couered with mould. If the ſoile be moiſt and giuen to bear other graſſe,the ſeed is ſoon ouergrown and choked,and then al wil run to graſſe,& turn to be a medow:which graſſe or coich when you ſee begin to ouerrun the ground, it muſt be all weeded out preſently an inch deepe within the ground, and by hand rather than any weeding-hooke or thiſtle ſpade. Now,when this hearbe Medica or Clauer graſſe begins once to floure cut it downe:and ſo oftenas it floureth againe,downe with it. Thus you may haue ſix mathes in one yere or four at the leaſt. You muſt neuer let it ſpindle and beare ſeed:for better is it to take it thus in the growth, while it is but young and greene graſſe, for three yeares together:and the forrage or fodder is moſt profitable. Sowne (I ſay) it muſt be in the Spring,and weeded for the firſt three yeares. The green ſourd afterwards ought to be pared away with hookes and ſpades cloſe to the ground : for by this meanes you ſhall be ſure,that all other weeds will die,and this hearbe take no harme by it,for that by this time it is deepely rooted. If the weeds do get head and ouercome it, the onely remedie is by the plough, to turne vp the ground ouer and ouer ſo many times,vntill all other roots be killed. Moreouer,heed muſt be taken,that of this herbage or fodder,beaſts do not eat their fil ; for feare you be driuen of neceſſitie to let them bloud,and take downe their rankeneſſe. The greener that it is,the more profit commeth thereof,for it driueth branch after branch,vntil at length it will crumble like duſt or powder, and then is it good for nothing.

As touching Cytiſus,[*i.* the Shrub Trifolie]which is a ſingular kind of paſturage, & paſſes al the reſt,I haue written at ful in my diſcourſe of ſhrubs. For now at this preſent I am to proſe-

cute

* Or rather *Arachos*

* *Siſſebant Varro* ſaith *Circhoat*, which is clean contrarie.

* *Eaoali ſeggeſt antiquam generi.*

cure and goe through the treatiſe of other ſorts of corne and their nature, if I had once written somewhat in one part thereof as touching the accidents and imperfections that happen among them. G

Chap. XVII.

¶ *The faults incident to corne, and their remedies. Alſo what corne is reſpective to this or that ſoile, for to be ſowne therein.*

THe firſt and principall defect obſerued in bread-corne, and Wheat eſpecially, is when it doth degenerate and turne into Otes: and not only it, but Barley alſo doth the like. Semblably, Otes otherwhiles ſerue the turne in ſtead of bread corne: as wee may ſee in ſome countries of Almaine, where they do vſually ſow it, and commonly they haue no other pottage there, than Oatmeale gruell [which they call Abremouz.] The foreſaid defect and imperfection is occaſioned chiefely by the moiſt ſoile or ouerwet weather. Another cauſe there followeth alſo thereupon, proceeding from the feebleneſſe and weakneſſe of the ſeed; namely, when it lieth long ſobbing in the ground, before it come vp: and hereto may be referred the faultines of the ſeed otherwiſe; namely, if it were worm-eaten or otherwiſe rotten at the time of ſowing: and verily, no ſooner appeareth it aboue ground, but the foreſaid change or baſtardie may be ſeene, whereby it doth appeare, that the cauſe is in the root. H

A ſecond defect or imperfection there is alſo incident to corn, which hath ſome neer reſemblance to the Otes aforeſaid; namely, when the graine being formed and newly come to the iuſt proportion of bigneſſe (howbeit not yet full and ripe) before that it is firm and hard, is ſmitten with a noiſome blaſt, and ſo, like an abortiue fruit, decaieth and windereth away within the eare in ſuch ſort, as there is no ſubſtance left therein, but appeareth void and emptie. Now theſe aduerſe and malignant winds hurt all ſpiked corne, as well Wheat as Barly, at three ſeueral times, to wit, in their floure; preſently vpon their blooming, and laſt of all, when they begin to ripen; for then, namely when they are vpon the point of maturitie, thoſe blaſts conſume the grain, and bring it to nothing, which before was full: whereas at the two former ſeaſons they hinder it altogether from knitting and growing. The hot gleames moreouer of the Sun, betweene often clouding, do much harme to corne. I

Furthermore, there be certaine little wormes breeding in the root, that do eat it: which happeneth by occaſion of much raine falling immediatly after the ſeedneſſe, eſpecially, when ſome ſudden heat and drowth enſueth therupon; which bindeth the earth aboue and ſo encloſeth the moiſture conceiued within, the very cauſe & nourice of putrifaction. Ye ſhall haue other ſuch like vermin engender likewiſe in the very grain of the corn, namely, when the ear doth glow within, and is chafed with ſultry hot rains. Ouer and beſides, there be certain [green] flies like ſmall Beetles, called Cantharides, which do gnaw and eat the corne. But al theſe, and ſuch like worms or flies die preſently, when the corn (which was their food) is gone. Moreouer, Oile, Pitch, and Tarre, all manner of greace alſo, be contrarie to ſeed-corne eſpecially; and therefore take heed th at you ſow none ſuch as hath caught oile, pitch, or greaſe. As for ſhowers of raine, good they are for corne, ſo long only as it is in the green blade: when corne is blooming, be it either wheat or barley, or ſuch like) raine is hurtfull. Mary Pulſe takes no harme thereby, vnleſſe it be the Cich-peaſe. K L

All kinds of wheat and other bread corne, when they be toward ripeneſſe, catch hurt by ſhowers; but Barley more than any. Beſides all this, there is a certaine white hearbe or weed reſembling Panicke, growing among corne, and ouerſpreading whole fields; which not onely hindereth corne, but alſo killeth all the cattell that feedeth thereupon. For as touching ray or darnel, burs, thiſtles, and brambles, I may hold and reckon them, not ſo much for faults and imperfections of corn, as rather the plagues and infections proceeding from the very earth. And for blaſting, which commeth of ſome diſtemperature of the aire (a miſchiefe common as well to corn, as vines) it is as hurtful as any other malady whatſoeuer. This vnhappie blaſt falleth moſt often in places ſubiect to miſts and dewes, and namely, hollow vallies and low grounds lying vnder the winde: for contrariwiſe, windie quarters, and ſuch as are mounted high, are not ſubiect to this inconuenience. Alſo we may number among the faults incident to corne, their rankeneſſe; namely, when the blade is ſo ouergrowne, and the ſtalke ſo charged and loden with a heauie head that the corn ſtandeth not vpright, but is lodged & lieth along. Moreouer, when there fals a great M

A a great glut of rain, inſomuch as the ground ſtands with water, there befalleth vnto all corn and pulſe, yea, and whatſoeuer is ſowne, a certaine diſeaſe called in Latine Vrica; inſomuch, as the very Cich-peaſe taketh hurt therby, for by reaſon that the rain waſhed from them that ſalt quality which was naturall thereunto, it becommeth ſweeter than it ſhould be, and loſeth the kind taſt. There is a weed that claſpeth and tieth about Ciches and Eruiles, wherby it choketh and killeth them both: and thereupon it is called Orobanctum, *i.* Choke Eruile. After the ſame maner dealeth * Ray or Darnel by wheat; wild Otes likewiſe, named by ſome Ægilops, with barly; as alſo the weed Securidaca, *i.* Ax-fitch, which the Greeks alſo (for the reſemblance that it hath to an axe head (call Pelicinon, * with Lentils. Theſe weeds (I ſay) kill corne by winding about it. Another herb there is, growing neere to the city Philippi, which killeth Beans: if the ground be fat and good, they name the ſaid weed Ateramnon; but if it be found in a hungry and leane ſoile, and namely, when being wet, ſome vnhappy wind bloweth vpon it, they call it Teramnon. As for the graine of Raie or Darnell, it is very ſmall, and lieth incloſed with a ſharpe-pointed husk. The bread which hath any of this ſeed in it, ſoone cauſeth dizineſſe and ſwimming of the head. And (by report) in Aſia and Greece the maſters of the common Bains and Stuphes, when they would keep away the great reſort of multitude thither, haue a deuiſe to caſt Darnell ſeeds vpon burning coles, for this perfume will quickly ſet them farther off. Moreouer, if the Winter proue to be wet and wateriſh, ye ſhall haue in the Pulſe called Eruile, a little vermin ingendred there called Phalangion, and it is of the kind of theſe ſpiders. Likewiſe vpon Vetches there wil breed naked dew-ſnails, yea, & otherwhile thoſe little ones with ſhels or houſes on their backs, which creeping from the ground, wil gnaw & eat them, that it is a wonder to ſee what foul work they will make. Thus much concerning all the maladies and inconueniences (to ſpeak of) incident to corne. It remaineth now to treat of the remedies. B C

As touching the cure of thoſe harms that come by hurtful weeds to the corn in blade, it conſiſteth principally in two things: namely, either in the vſe of the weeding knife or hooke, when they be newly come vp; or els in ſtrewing aſhes when the corn is a ſowing. But as for thoſe dangers that touch the ſeed or grain in the eare and cod, as alſo that ſettle about the root, they muſt be preuented by good forecaſt, euen before it be thrown into the ground. It is generaly thought that if ſeed-corn lie ſteeped beforehand in Wine, it will be better able afterwards to reſiſt all diſeaſes whatſoeuer. *Virgil* giueth order to infuſe or ſoke the Beanes that muſt be ſown, in nitre and oile lees or dregs; and he aſſureth vs, that they will proſper mightily beſides, and become exceeding great. But others are of opinion, that if for 3 daies before they be caſt into the earth they lie in vine & ſhere water mingled together, they wil, being thus prepared come on apace, and thriue paſſing well. It is ſaid moreouer, That if Beans be thrice raked and rid from weedes, one Modius of them being whole and ſolid, wil yeeld a Modius again after it is husked & broken. As for other ſeed-corn, it wil eſcape the danger of the worme, if either it lie before among Cypreſſe leaues bruiſed; or be ſowed in and about the change of the Moon, namely, when ſhe is not to be ſeen aboue the earth in our hemiſphære. Many there be who practiſe other remedies: & namely for the Millet, they would haue a toad to be caried round about the field before that it be harrowed: which done, to be put cloſe within an earthen pot, and ſo buried in the middeſt of the ſaid field: and by this meanes forſooth, neither Sparrows will lie vpon the corn, nor any worm hurt it. Mary, in any caſe this ſame toad muſt be digged out of the ground againe before the field be mowed, els will the Millet proue bitter in taſt. The like experiment they ſay is of a Moldwarps ſhoulder, for if any corn be ſowed or touched therewith before, it will come vp the better and bring more increaſe. *Democritus* had a deuiſe by himſelfe for all ſeed & corn whatſoeuer, namely, to temper & ſoke the ſame corn in the iuice of the herb houſleeke or Sen-greene, growing vpon houſes either tiled or ſhindled; which in Greeke is called Aizoon, and in Latine Sedum or Digitellum; for this medicine will ſerue for all maladies. The common practiſe of our husbandmen is this: in caſe through the ouerſweet ſap or juice in greene corne, wormes take to the roots: for to ſprinkle them with ſimple oile lees pure and clean without any ſalt, & afterwards to rake it in. Alſo, when the corn begins to ioint and gather into knots, then to cleanſe the ground, and put off no longer, for feare leaſt the weeds do get head & ouergrow. This I am ſure vpon mine owne knowledge, that there is an herbe (but what proper name it hath I wote not) which if it be interred in the foure corners of a field that is ſown with Millet, it wil driue away Stares and Sparrows, which otherwiſe would by whole flights and flocks lie thereupon and do much D E F

* Ἄρακος

* ἀμάρη, but more truly ἀγέλιον out of *Theophraſtus*. Thus *Plinie* miſtaketh in many places: and for example, immediatly in the word *Ateramnon*, which is appropriate to all Pulſe that require much ſeething or be hard of digeſtion. *Theophraſt. de caus. plant.* l. 4. c. 12.

much harme; nay I will speake a greater word and which may seeme wonderfull, There is not a bird of the aire one or other, that dare enter or approch such a field. Field-mice and Rats are skared away and will not touch corne, which before the sowing was either bestrewed with the ashes of weasels or cats, or els drenched with the liquor and decoction of water wherein they were boiled; howbeit this inconuenience insueth hereupon, That bread made of such corn will haue a smach, and sent strongly of such cats and Weasels: and therefore it is supposed a more expedient and safer way to medicine our seed corne with oxe gall, for to preserue it from the said Mice and Rats. But what remedy against the blast and mildew, the greatest plague that can befall vpon corn? Mary prick downe certaine Lawrell boughes here and there among the standing corne, all the said mists and mildewes will leaue the corne and passe to the Bay leaues, and there settle. What shall we do then to corne when it is ouer-rank? Eat it me downe with sheep and spare not, whiles it is young and in the blade onely, before (I say) it be knotted: and neuer feare harm by the sheeps teeth as neere as they go to the ground: for let it be thus eaten many times, the corn will be the better, yea and the head will take no harme thereby but prooue the fairer. If such rank corne be once cut down with the syth, & no more, certain it is that the grain in the eare will be the longer to see to, howbeit void and without any floure within it: for sow such seed again, & it wil neuer grow nor come vp. And yet about Babylon, the maner is to mow it twise first, and the third time to put in sheep to it for to eat it down; otherwise the corn would neuer spindle, but blade still, and run all to leafe. But being thus cut and eat again, and eaten in the end, ye shall haue it to increase and multiply 150 for one, * so fertile is the soile: and if the owner be a good husband besides, and vse the ground accordingly, he shall reap thrice as much, euen a 150 fold. And what carefull diligence is that which is here required? Surely neither much, nor difficult: only he must be sure to keep the ground well with watering for a long time together, to the end that it may be discharged of the ouermuch fat within it, which by this means will be washed all away, and the rankenesse delaied. Yet as rich and fertile as this soile is, the two riuers Euphrates and Tigris (which vse to ouerflow and water the country) bring no slimy mud with them, as Nilus doth in Egypt, wherby the ground is made so fat as it is: neither is the nature of the earth there, giuen to breed herbs that it should need any weeding: and yet so plenteous and fruitfull it is, that it soweth it selfe against the next yere; for the corne that shedeth in the reaping and mowing, being troden vnder foot into the ground, is as good as a sowing, and riseth of it selfe without any further labor.

* Felicitas soli.

Seeing then there is so great difference in the soile, I am put in minde thereby to set euery ground with seed respectiuely, according to the nature and goodnesse thereof. This therfore is the opinion of *Cato*, that in a grosse and fat soile, there would be wheat and such like hard corne sown; and if the same be subiect also to mists and dews, there may be sown therein raddish, millet, and Panick, must be sowne first in a cold and waterish ground, and afterwards for change in a hot soile. *Item*, the red bearded wheat Far or Adoreum, requireth a chalkie and sandy ground, and namely if it be well watered. *Item*, the common wheat loueth a drie soile, exposed to the Sun, and not giuen much to breed superfluous weeds. *Item*, Beanes will doe well in a sound and fast soile. As for Vetches, they care not how little they be sowed in a moist piece of ground; and such as is apt to run to grasse. Moreouer, for the fine winter wheat Siligo, whereof the best manchet is made, and also for the common frumenty wheat, there would be chosen an open & high ground, lying pleasantly vpon the Sunne, that it might haue the heat thereof to parch it as long and as much as is possible. As for Lentils, they doe like a good rough and shrubbie soile, full of red earth, so as it be not apt quickly to gather agreen-sord. * Barly would gladly grow vpon a restie ground new broken vp, or else such as be in heart to beare euery yeare. And as for Summer (barley) of three moneths, it would be sowne in a ground where it could not haue an earely or timely Seednes, & which is so fat and rich, as it may affoord to beare crop, yere by yere: finally, to speak to the purpose indeed, this also is *Catoes* witty resolution in one word for all: if the soile be light and lean, feed it with such grain or forage feed, as require no great nourishment, as for example, with Cytisus, and excepting the Cich-pease, with all pulse that are vsed to be plucked out of the earth, and not mowed downe: and thereupon indeed are these pulse called in Latine Legumina, because they are plucked and gathered in that sort: but in case the ground be good and fat, sow such things as require fuller food and nutriment; and namely, all garden-worts and pot-herbes; wheat, both the common and the fine; and Linseed. Then, according to this rule, a leane

* Vt vis de multi exponit Cornif. Plutarcho.

A leane and hungry soile will well agree with barly, for the root is contented with lesse nutriture: wheras contrariwise we allow both lighter, and also more massie and richer ground for our ordinary wheat. In a low and wet piece of ground, it is good to sow the red wheat Adoreum, rather than the common wheat Triticum: but both it and barley will sort well with a soile of a middle temperature. The hills yeeld a firm, fast, and strong kind of wheat, but the grain is but smal. And to conclude, the best kinds of wheat, to wit, Far and Siligo, challenge for their lot to bee seated in a chalky soile, and therwith alwaies wet and soked in water.

Chap. XVIII.

B ¶ *Of strange prodigies and wonders obserued in corne: the knowledge and skill of earing and tilling the ground: also diuers sorts of plough-shares.*

Albeit I haue in the title of this chapter purposed to write of prodigies seen in corne, yet to my knowledge, there neuer happened but once the like wonder and portenteous sight to this which I shall tell, and which befell in the time that *P. Ælius* and *Cn. Cornelius* were Consuls of Rome; that very yeare wherein *Annibal* with his whole armie was defeated and vanquished: for then (by report) there was corne grew vpon trees.

But forasmuch as I haue discourssed at large of the sundry kinds as well of corn as of ground, I will proceed now forward and come to the manner of ploughing the earth, after I haue first set downe before all things els, how easie the husbandrie is in Egypt: for there the riuer Nilus seruing in stead of a good plough man, beginneth to swel and ouerflow (as we haue before rehearsed) at the first new Moone after the Summer Sunstead. Hee beginneth faire and softly, and so increaseth more and more by little and little; but all the while that the Sun passeth vnder the signe Leo, he higheth apace vntill he be risen to his ful heigth: being entered once into Virgo, his fury slaketh; then decreaseth he as fast, vntill hee be fallen againe into his wonted channell, which ordinarily happeneth by the time that the Sun is in Libra. Now this is obserued, That if he rise not plumb aboue 12 cubits high, the people are sure to haue a famine of corn that yere: the like also do they make account of, in case he passe the gage of sixteen cubits: for the higher that he is risen, the longer it is again ere he be fully fallen, by which time the Seednesse is past, and men cannot sow the ground in due season. It hath bin generally receiued for a truth, That presently vpon the departure of this deluge and ouerflowing of Nilus, they were woont to cast their seed-corne vpon the floten ground, and presently let in their swine after for to trample it with their feet into the earth whiles it was soft and drenched. And verily, for mine owne part, I beleeue wel, they vsed so to do in old time: for euen now adaies also, much more ado they make not about it. Howbeit, this is certaine, that first they cast their seed vpon the slime and mud so soone as the riuer is downe, which commonly falleth out in the very beginning of Nouember; which done, they go ouer it with the plough and giue it a light tilth, so as it may be couered only and lie vnder a small furrow. Some few there be that afterwards fall a weeding, which point of husbandry they call Botanismos: but the most part, after they haue once sowed and turned their seed into the ground, neuer after make a step into field to see how their corne groweth, vntil they go once for all with syth on neck or sickle in hand, namely at the end of March; for then they fall to reaping and cutting it downe; so as by the moneth of May they sing in Egypt, Haruest in, and all is done for that yeare. As touching this corne gathered in Base Egypt, the straw is neuer a cubit long: the reason is, because the seed lieth very ebbe, and hath no other nutriment than from the mud and slime aforesaid; for vnder it is nothing but sand and grauell. But those that inhabit higher vp into the countrey, namely about Thebais, they be far better prouided for corne, because Egypt indeed (for the most part) lyeth low vpon marais ground. Toward Babylon likewise and Seleucia (where the riuers Euphrates and Tigris doe swell ouer their banks and water the country) the same husbandry is practised, but to better effect and greater profit, by reason that the people may let in the water at sluces and sloud-gates, more or lesse with their owne hands, according as they list themselues. Also in Syria, they haue their small ploughs for the nones to take a shallow stitch and make light worke: whereas in many places here with vs in Italy, eight oxen are little enough to euery plough, and to go away with all they must labor at it till they blow and pant again. It is an old said Saw, and may goe for an Oracle to be practised in all parts of husbandry, but in this point of ploughing especially, *Bee ruled by the*

the nature of euery countrey, and see what each ground will abide. To come now vnto our ploughes. Of Shares, there be many sorts: first, there is that instrument called a culter, which serueth to make way before, cutting and cleauing the hard and thick ground as it goeth, before it be broken vp and turned atoneside; this sheweth by the slits and incisions that it maketh (as it were by a true line drawn) how the furrows shal go; after which commeth the broad bit of the ploughshare indeed, lying flat-wise, and in earing casteth vp all before it, and cleareth the furrow. A second sort there is, commonly vsed in many places, and it is no more but a bar of yron pointed sharpe in manner of a beak-head or stem of a ship; and it may be called a Rostle. And when the ground is not stubborn but gentle to be wrought, there is a third kind vsed, which is nothing but a piece of yron not reaching all ouer the* plough head and shooing it to the full, but turning vp like a snout with a small point sharp at the end. This neb is somewhat broader in a fourth kinde of shares, but as it is broader in blade and trenchant withall, so it is sharper also at the end; insomuch, that both with the point forward & the edges of the sides, it not only pierces the ground before it poincteth like a sword, but also cutteth the roots of weeds which it incountreth: a deuise inuented not long since in Rhœtia. As for the Gaules, they set too besides, certain small roundles or wheels; & a plough thus shod & harnaised, they call in their language * Planarati: the head of their share is broad, fashioned like vnto the bit of a spade: and thus they sow their grounds for the most part, new broken vp and not tilled nor eared before. And for that their plough-shares be large and broad, so much the easier turn they vp good turfs of earth and make broad furrows. Presently after the plough, they throw in their seed, and mould or couer it afterwards with yron-toothed harrows drawn aloft. Lands in this manner sown, need no other raking or weeding; for commonly they make not past two or three bouts in a land, and as many ridges. Finally it is thought, that in this manner there may be sown in one yere by the help of one yoke of oxen, 40 arpens or acres of land ordinarily, if the ground be gentle and easie to be eared; but if it be stiffe and stubborne, they shall haue worke enough to go through thirty.

* Dentali.

* or as some think, Planigradi.

Chap. XIX.

¶ *The seasons that be proper for tilling the ground: also the manner of coupling oxen in yoke.*

In this operation of ploughing ground, I am of mind to follow that Oracle or Aphorisme of *Cato*, who being asked which was the first and principall point of Agriculture, answered thus, *Euen to husband, order, and tend ground well*: being demanded againe, what was the second, hee made answer, *To plough well*. And when the question was propounded concerning the third point of husbandry, he said, *That it consisted in manuring and dunging it well.* There be other necessarie rules besides, set downe by him as touching this matter; namely, Make no vnequall furrowes in ploughing, but lay them alike with one and the same plough. Passe not the kindly season, but eare the ground in due time. In the warmer countries, lands would be broken vp and fallowes made, immediatly after the Winter Solstice or Sun-stead. In colder regions, touch them not before the spring Æquinox or Mid-march. In a drie quarter, plough more early than in a moist: sooner also in a fast and compact soile, than in a loose and light ground: in a fat and rich field, than in a leane and poore land. Looke in what climat the Summer is ordinarily drie and hot, it is thought more profitable to eare vp a chalky or a light and leane ground, between the Summer Sunstead and the Æquinoctiall in the fall of the leafe. If the climat be such as yeeldeth but little heat in Summer, and therewith many showers of raine, where the soile also is fat and beareth a thick green-sourd, it were better to break vp ground and fallow in the hotest season: where the soile is heauie, grosse, and fat, and wherein a man may tread deepe, I like well that it should be tilled and stirred in winter: but in case it be very light and drie withall, it would not be medled with but a little before *seednes. Here also be other proper rules set down by *Cato*, pertinent to Agriculture: Touch not (qd. he) in any hand a piece of ground that soon will turne to dust and mire. When thou doest plough indeed for to sow, imploy thy whole strength thereto: but before thou take a deep stitch for all, giue it a pin-fallow before; this commodity commeth therof, that by turning vp the turfe with the bottom vpward, the roots of weeds are killed. Some are of this opinion, that how soeuer we do els, a ground should haue the first breaking vp about the spring equinox: a land that thus hath bin once plowed in the spring, is called in Latin Vervactum, & hath that name of the foresaid time Ver[i. spring.] Indeed ley grounds & such as rest

* Bene colere. * Bene arare. * Bene sarcolare.

* In the spring

rest each other yere, must be in this wise followed. Now if you would know what the Latines mean by Nouale, they take it for a field sowed euery second yere. And thus much of the land.

To come now vnto our draught oxen that must labour at the plough: they ought to be coupled in yoke as close together & as streight as is possible, to the end that whilst they be at work and ploughing, they may beare vp their heads; for by that meanes they least doe gall or bruise their neeks. If they chance to goe to plough among trees and vines, they must be muzled with some frailes or deuises made of twigs, to the end they should not brouse and crop off the yong springs and soft tendrils. Moreouer, there ought a little hatchet to hang euermore fast to the plough beame before, therewith to cut through roots within the ground, that might breake or stay the plough: for better is it so to do, than to put the plough to it, to keep a plucking at them or to force the poore oxen to lie tugging & wrestling with them. Also in ploughing, this order is to be kept, That when the oxen are* gone down with one furrow to the lands end, they turne and goe vp againe with another; so that in ploughing of a land they * rest betweene whiles as little as may be, but euermore go forward in their labour vntill they haue made an end of their *halfe acre, or halfe daies worke: and verily it is thought sufficient for a teem of oxen to breake vp (at the first tilth) in one day of restie or ley ground, one acre, taking a furrow or stitch of nine inches; but at the second tilth or stirring, an acre and a halfe; which is to be vnderstood of an easie and mellow soile to be wrought, for if it be tough and churlish, it is wel if they eare vp at the first, halfe an acre; and at the next time they may go through with one whole acre, how hard soeuer the ground be; for thus haue poore beasts their taske set, and their labour limited by Natures lore and appointment. Euery field to be sown must be eared at first with streight & direct furrows; but those that follow after, ought to go byas and winding. If a ground vpon the pendant or hanging of the hil be to be broken vp, the furrowes must go crosse and ouerthwart: howbeit, the point and beak of the plough-share must be so guided, that one while it beare hard aboue on the one side, and another while beneath on the other side: and verily in this mountaine worke, the ploughman that holdeth the plough hath toile enough, and laboreth at it as hard as the oxen do. Certes, there be some mountaines that haue no vse at all of this beast, but they eare their ground with raking and scraping hooks only. The ploughman, vnlesse he bend and stoope forward with his body, must needs make sleight worke, and leaue much vndon as it ought to be; a fault which in Latine we call Preuarication: and this terme appropriate vnto husbandrie, is borrowed from thence by Lawyers, and translated by them into their courts and halls of pleas: if it be then a reprochfull crime for Lawyers to abuse their clients by way of collusion, wee ought to take heed how we deceiue and mocke the ground, where this fault was first found and discouered. To proceed, the plough-man euer and anone had need to cleanse the culter and the share with his staffe, tipped and pointed at the end like a thistle spade: he must beware that betweene two furrowes, he leaue no naked balks raw and vntilled: also that the clots ride not one vpon anothers back. Badly is that land ploughed, which after the corn is sowed, needs the great harrows and clotting. Contrariwise, a man may know where there is good worke, namely, if the turfe be so close couched that there be no seams to be seen where the plough-share went: finally, it is a profitable point of husbandry and much practised (where the ground doth both beare and require it) For to draw here and there broad gutters or furrows, to drain away the water into ditches and trenches cast for the nones betweene the lands, that otherwise would stand within and drowne the corne.

* Versum peragi. * Stigare. * Actus

Chap. XX.

¶ *Of harrowing and breaking clods. Of a certaine kind of ploughing vsed in old time. Of the second tilth or fallow called Stirring: and of cutting.*

After the second fallow called Stirring, done with crosse and ouerthwart furrow to the first; then followeth clodding, if need be, either with rakes or great harrowes: vpon which insueth sowing: and when the seed is in the ground, harrowing a second time with the smal harrow. In some places, where the manner of the country doth so require, this is performed with a tined or toothed harrow, or els with a broad planke fastened vnto the plough taile, which doth hide and couer the seed newly sowen: and in this maner to rake or harrow, is called in Latine Lirare, from whence came first the word Delirare, which is to leaue bare balks vncouered, and by a Metaphore and borrowed speech, to raue and speake idlely.

* *Illa seges demum votis respondet auari, Agricolæ, bis quæ sibi sæpe ferit.*

* 1 Breaking.
2 Shutting.
3 Crushing.
4 Setting vp.
5 Casting downe.

It should seem that **Virgil* prescribed, that the ground should haue foure tilthes in all, by these words, when he said, That the corne was best, which had two Summers and two Winters. But if the ground be strong and tough, as in most parts of Italy, there needs a * fift tilth before sowing, and in Tuscan verily they giue their ground, other whiles no fewer than nine fallowes, before it be brought into tillage. As for Beans and Vetches, they may be sowed vnder furrow, without breaking vp the ground before; for this is a ready way, gaining time, sauing charges, & sparing labour. G

And here I cannot ouerpasse one inuention more as touching earing and ploughing the ground, deuised in Piemont and those parts beyond the Po, by occasion of some hard measure and wrong offered to the people and peisants of that country during the wars. And thus stood the case. The Salassians making rodes into the vale lying vnder the Alpes, as they forraied and harried the country all ouer, assailed also to ouerrun their fields of Panick and Millet being now come vp and wel grownē, meaning thereby to destroy it: but seeing the nature of that graine to be such, as to rise againe and to check this iniury, they set ploughs into it, and turned all vnder furrow, imagining by that means to spoil it for euer. But see! what insued therupon? those fields thus misused (in their conceit) bare a two fold crop, in proportion to other yeres; & yeelded so plentifull an haruest, as that thereby the peisants aforesaid learned the deuise of turning corn in the blade into the ground, which I suppose in those days when it new came vp, they called Aratrare. And this point of husbandry they put in practise, when the corne beginnes to gather and shew the stem or straw; to wit, so soone as it hath put forth two or three leaues and no more. H

Neither will I conceale from you another new deuise, practised and inuented first, not aboue three yeres past in the territory of Treuiers, neer to Ferrara. For at what time as their corn fields by reason of an extreme cold winter, seemed to be frost-bitten and spoiled, they sowed the same again in the month of March, raking and scraping the vpper coat of the ground onely without more ado: and neuer in their liues had they the like increase when haruest came. Now as touching all other tillage and husbandry meet for the ground, I will write thereof respectiuely to the seuerall kinds of corne. I

Chap. XXI.

¶ *Of the tillage and ordering of the ground.*

THe fine Wheat Siligo, the red bearded Wheat Far, and the common Wheat Triticum; Spelt or Zea (generally called Seed) and Barly, when they be new sown, would be wel clotted and couered first, harrowed afterwards, & weeded at the last to the very root; al at such seasons as shall be shewed hereafter. And to say a truth, euery one of these is a sufficient worke for one man to do in a day throughout an acre. As for the Sarcling or second harrowing, it doth much good to corn: for by loosening the ground about it, which by the winter cold was hardened, clunged, and (as it were) hide bound, it is somwhat inlarged and at libertie against the Spring tide, and full gladly admitteth and receiueth the benefit of the fresh and new come Sunshine daies: let him take heed who thus sarcles or rakes the ground, that he neither vndermine the roots of the corn, nor yet race or disquiet & loosen them. The common wheat, Barley, the Seed Zea (*i.* Spelt) and Beans, would do the better if they were thus sarcled, and the earth laied loose about them twice: the grubbing vp of weeds by the root, at what time as the corne is iointed (namely, when the vnprofitable and hurtful hearbs are plucked forth and rid out of the way) much helpeth the root of the corn, discharging it from noisom weeds, procuring it more nutriment and seuering it apart from the other green fourd of common grasse. Of all Pulse, the cich pease asketh the same dressing and ordering, as the red wheat Far. As for beans, they passe not at all for weeding, and why? they ouergrow all the weeds about, and choke them. The Lupines require nought els to be done to them but only weeding. Millet and Panick, must be clotted and once harrowed vntill they be couered: they call not for a second raking & scraping about them, for to loosen the earth, and to lay fresh mould vnto them; much lesse to be weeded. As for Silicia or Siliqua, *i.* *Fenigreeke, and Fasels, *i.* Kidney-beans, they care onely for clodding, & there an end. K L M

* For so he interpreteth it himself in the 11 chap. of this booke.

Moreouer, there be certain grounds so fertile, that the corn comming vp so thick & ranke in the blade, ought then to be kembed (as it were) & raked with a kind of harrow set with teeth or spikes

A spikes of yron: and yet for all this, they must be grased or eaten down besides neuertheless with sheep. Now we must remember, that after such cattel hath gon ouer it with their teeth, the same corne thus eaten downe, must of necessity be sarcled, and the earth lightly rāked and raised vp fresh againe. Howbeit, in Bactriana, Africke, and Cyrene, there needs no such hand at all: for the climate is so good, so kinde, and beneficiall, that none of all this paines is required: for after the seed is once sowne, they neuer visit it but once for all at nine months end, at what time they returne to cut it down and lay it vpon their thrashing floores: the reason is, because the drought keepeth downe all weeds; and the dewes that fall by night, are sufficient to refresh and nourish the corne.

Virgil is of opinion, That fallowes would be made euery yeare, and that our corn field should B rest betweene whiles, and beare but each other yere. And surely, I doe find this rule of his most true, and doubtlesse right profitable; in case a man haue land enough for to let his grounds play them, and rest euery second yere. But how if a man is streighted that way, and hath no such reach and circuit lying to his liuing? Let him help himselfe this way: let him (I say) sow his good red wheat Far againſt the next yere, vpon that ground from whence he gathered this yeare a crop of Lupines, Vetches, or Beans, or some such grain as doth inrich and muck the ground. For this also is principally to be noted, that some corne is sowne for no other purpose, but by the way as it were to aduance and help others to fructifie: howbeit, small fruit and increase (to speak of) ariseth thereby, as I haue obserued once for all in the booke immediatly going before, because I would not willingly reiterate and inculcate one thing often. For herein regard especially ought C to be had, vnto the nature and property of euery soile.

Chap. XXII.

¶ *Of certaine countries exceeding fertile and fruitfull. Of a Vine bearing grapes twise in one yeare. Of the difference and diuersitie obserued in waters.*

THere is in Africke or Barbary a city called Tacape, scituate in the midst of the sands, as men go to the Syrts and Leptis the great: the territory lying about which city, by reason that it is so well watered, is maruellous fruitfull, and indeed passeth a wonder and is incredible. Within this tract there is a fountain, which serueth abundantly for three miles well neer, euery way; the head therof verily is large enough other wise, howbeit the inhabitants about it D are serued with water from thence by turns, and dispensed it is among them at certain set hours, and not otherwise. There standeth there a mighty great date-tree, hauing vnder it growing an oliue, vnder which there is a fig-tree, and that ouerspreadeth a Pomegranat tree, vnder the shade whereof there is a Vine: and vnder the compasse thereof, first they sow Frument or eared corne, after that Pulse, and then worts and herbs for the pot, all in one and the same yere. Euery one of these rehearsed, liue, joy, and thriue vnder the shade of others. Euery foure cubits square of this soile (taking the measure of a cubit from the elbow, not to the fingers ends stretched out in length, but clasped together into the fist) is sold for * 4 deniers Roman: but this one surpasseth all the rest. The vines in the said territory beare twice a yeare, and yeeld their grapes ripe for a E double Vintage. So exceeding fruitfull is the soile, that vnlesse the rankenesse thereof were abated and taken downe, by bearing sundry fruits one vnder and after another, so that it were imploied to one thing alone, the inhabitants should neuer haue any good thereof: for by reason of the ouer-rankenesse, each seuerall fruit would perish and come to nought: but now by meanes of plying and following it still with feed, a man shall gather one fruit or other ripe, all the yeare long. And for certaine it is knowne, that men cannot ouercharge the ground, no nor feed the fertilitie of it sufficiently.

* 2. *sh. 6. d. sterl.* By which reckoning one acre would cost about 20 pound sterling so much in proportion of the whole, as this cubit is vnder our halfe yard or 18 inches.

Moreouer, all kinds of water are not of like nature nor of equall goodnesse, for to drench and refresh the ground. In the prouince of Narbon, now Languedoc, there is a famous wel or fountain named Orge, within the very head wherof there grow certaine herbes, so much desired and F sought for by kine and oxen, that to seeke and get a mouthfull of them, they will thrust in their whole heads ouer their eares, vntill they meet therewith: but how soeuer these herbs seeme to spring & grow within the water, certain it is, that nourished they are not, but by rain from aboue. And therfore to conclude & knit vp all in one word, Let euery man be wel acquainted with the nature both of his own land which he hath, and also of the water wherewith he is serued.

Chap. XXIII.

¶ *Of the diuers qualities of the soile. Also, the manner of dunging or manuring grounds.*

IF you meet with a ground of your owne, which we called heretofore by the name of Tenera; the floure indeed and principall of all others; after you haue taken off a crop of Barley, you may very wel sow Millet thereupon: and when that is inned and laid vp in the barne, proceed to Raddish. Last of all, after they be drawne, there may be barly or common wheat sowed in the place, like as they do in Campaine; for surely such a piece of ground needs no other tillage, but often sowing. Another order there is besides this in sowing of such soile; namely, that where there grew the red wheat Adoreum or Far, there the ground should rest all the four winter moneths, and in the Spring be sowed again with Beans; so that it alwaies be imploied and kept occupied vntill Winter without any intermission. And say that the ground be not altogether so fat, yet it may be ordered so, that it be euer bearing by turns in this sort, that after the Frumenty or Spike corne be taken off, there be pulse sowne three times, one after another. But in case the ground be ouer poore and lean, it must be suffered to rest and take repose two yeares in three. Moreouer, many husbandmen do hold, that it is not good to sow white corne or Frument vpon any land, but such as lay fallow and rested the yeare before.

However it be, the principall thing in this part of Agriculture, consisteth in dunging, wherof I haue written already in the former book next to this. This one point only is resolued vpon by all men, that none of our grounds ought to be sowed, vnlesse they be manured and mucked before. And yet herein must we be directed by certain rules peculiar and proper thereunto, as follow. Millet, Panick, Rapes, Turneps, or Nawews, ought neuer to be sowed but in a ground that is dunged. If there be no compost laid vpon a ground, sow vpon it Frument or bread-corne, rather than Barley. Likewise in grounds that rest and lie fallow euery other yere, albeit in all mens opinion, they are thought good for to beare Beans, yet notwithstanding beans loue better wherefoeuer they come to be sowed in a ground but newly mucked. He that mindeth to sow at the fal of the leafe, must in the month of September before, spread his dung, turn it in with the plough, and so incorporat it with the soile presently after a shower of rain: euen so also, if a man purpose to sow in the spring, let him in the winter time dispose of his mucke vpon the lands and spread it. The ordinary proportion is, to lay 18 tumbrels or loads therof vpon euery acre. Throwne abroad it must be also before it be dried, and ere you sow, or els so soone as the seede is in the ground, that it may be harrowed in with the corne. But in case this manner of dunging be neglected, it followeth then before that you do harrow, to strew the short small dung in manner of dust gathered out of Coupes, Mues, and Bartons, where foule are fed; or els to cast Goats tredles vpon the land, as if you would sow seed, and then with rakes and harrowes to mingle it with the soile.

To the end now that we may determine fully as touching this care also, belonging to dung, euery sheep or goat and such small cattell, should by right yeeld ordinarily in dung one load in ten daies: and euery head of bigger beasts ten load; for vnlesse this proportion and quantity of mucke be gathered, plain it is, that the granger or master of husbandry, hath not don his part, but failed in litering of his cattell. Some hold opinion, that the best way of mucking a land is, to fold sheep and such like small cattell thereupon, euen in the broad open field; and to this purpose they inclose or impark them within hurdles. In a word, a ground not dunged at al, groweth to be cold; and again if it be ouermuch dunged, the heart thereof is burned away. And therefore the better and safer way is to muck by little at once and often, rather than to ouerdo it at once. The hotter that a soile is, it stands by good reason, that the lesse compost it requireth.

*or rather (after Columella) 30 daies.

Chap. XXIIII.

¶ *Of good seed-corne. The manner of sowing ground well. How much seed of euery kind of graine an acre will take. The due seasons of Seedneese.*

THe best corne or Zea for seede, is of one yeares age, two yeares old is not so good: that of three, is worst of all: for beyond that time, the heart is dead, and such corne wil neuer spurt. And

A And verily this that is said of one sort may be verified of all kindes. The corne that setleth to the bottome of the mowgh in a barn toward the floore, is euer to be reserued for seed. And that must needs be best, because it is weightiest, for therein lieth the goodnesse: neither is there a better way to discern and distinguish good corn from other. If you see an eare of corn hauing grains in it here and there staring distant asunder, be sure the corn is not good for this purpose, and therefore it must be cast aside. The best graine looketh reddish, and being broken between ones teeth, retaineth still the same colour within: the worse corn for seed is that which sheweth more of the white flower within.

Furthermore, this is certain, that some grounds take more seed, and some lesse. And hereby verily do husbandmen gather their first presage religiously, of a good or bad haruest; for when
B they see the ground swallow more seed than ordinary, they haue a ceremonie to say & beleeue that it is hungry, and hath greedily eaten the seed. When a man is to sow a moist ground, good reason there is to make the quicker dispatch, and to do it betimes, for fear lest rain come to rot it. But contrariwise in dry places it is not amisse to stay the later, and attend till raine follow, lest by lying long in the earth, and not conceiuing for want of moisture, it lose the heart & turn to nothing. Semblably, when a man soweth early, he must bestow the more seed and sow thick, because it is long ere it swel and be ready to chit. But if he be late in his seednes, he should cast it thin into the ground, for thick sowing will choke and kill the seed. Moreouer, in this feat of sowing there is a pretty skil and cunning, namely to cary an euen hand, and cast the seed equally thorowout the whole field. The hand (in any case) of the seeds-man must agree with his gate
C and march: it ought alwaies to go iust with his right foot. Herein also this would not be forgotten, that one is more fortunate and hath a more lucky hand than another: and the seed will prosper better and yeeld more encrease that such a one soweth: an hidden secret surely in Nature, and whereof we can yeeld no found reason. Ouer and besides, this is to be considered, that corn comming from a cold soile, must not be sowne in a hot ground; nor that which grew in a forward and hasty field, ought to be transferred into lateward lands. How soeuer, some there be that haue giuen rule clean contrary: howbeit they haue deceiued themselues with al their foolish curiositie.

Now as touching the quantitie of seed that must be giuen, according to the varietie both of ground and grain, these principles following are to be obserued: in a reasonable good ground
D of a mean temperature, an acre in ordinarie proportion wil ask of common wheat Triticum, or of the fine wheat Siligo, 5 modij; of the red wheat Far, or of *feed [for so we cal a kind of bread corn] ten Modij; of Barly fix; of Beans as much as of common wheat, and a fift part or one Modius ouer; of Vetches 12; of Cich pease the greater, Cichlings the lesse, and of pease three; of Lupines ten; of Lentils 3; [as for these, folk would haue them sowed together with dry dung] of Ervile six; of Silicia or Feni-greek six; of Phaseols or Kidny beans foure; of Dradge or Balimong for horse prouender, 20; but of Millet and Panick 4 Sextars. How beit herein can be set down no iust proportion, for the soile may alter all. And in one word, a fat ground will receiue more, and a lean lesse. Besides, there ariseth a difference another way, in this manner; if it be a
E massie, fast, chalky, and moist ground, you may bestow in one acre thereof six Modij, either of common wheat or of fine Siligo; but in case it be loose and light, naked, dry, and yet in good heart and free, it will aske but foure. For the leaner that a ground is, vnlesse it be sown scant, and the straw come vp also thinne, the shorter eare will the corne haue, and the same light in the head, and nothing therein. Be the ground rich and fat, ye shall see out of one root a number of stems to spring; so that although the grain be thin sown, yet will it come vp thick, and beare a faire and full eare. And therefore in an acre of ground you shall not do amisse to keep a meane between foure and six Modij, hauing respect to the nature of the soile. And yet some there be who would haue [of wheat] fiue Modij sown at all aduenture, and neither more nor lesse, whatsoeuer the ground be. To conclude, if the ground be set with trees, or lying on the side of an hil, all is one, as if it were lean, hungry, and out of heart. And hereto may be reduced that notable
F Aphorisme, worthy to be kept and obserued as a diuine Oracle: Take not too much of a land, weare not out all the fatnesse, but leaue it in some heart. Ouer and aboue the rules aforesaid, *Accius* in his Treatise called Praxidicus, comes in with one more of his own: Sow your ground (saith he) when the Moone is in any of these signes, Aries, Gemini, Leo, Libra, and Aquarius. And *Zoroastres* hath another Astronomicall obseruation by him selfe, That the Sun should be entred

*He meaneth Zea or Spelt

entred into Scorpio, and past twelue degrees thereof, the Moone being at the same time in Taurus. G

Now followeth the deep question to be discussed and determined, As touching the fit time and season of sowing corn: which I haue put off and deferred to this present place. And this would be handled and considered vpon with exceeding great care and regard, as depending for the most part of Astronomie, and requiring good insight in the course and motion of the Planets, in the order also and influence of the fixed starres: and therefore I purpose to lay abroad the opinions and judgments of antient writers principally in that behalf. To begin therefore with *Hesiod*, esteemed the prince and chiefe of all those that gaue precepts of Agriculture; hee hath set down one certain time of Seednes, to wit, presently after the fall or occultation of the Star Vergiliæ, *i.* the Brood-hen: and no maruell, for he wrot that book of his in Bœotia, a countrey in the very heart of Hellas or Greece, respectiuely to his own countrymen and that climat: and in very truth that was the time of sowing there, as we haue noted and specified already. The best Authors of name, and who haue written most exactly of this argument, are all agreed vpon this point and conclusion, saying, That as all fowles of the aire and foure footed beasts haue their due season of ingendring; euen so there is a certaine time when as the earth is as it were in the ruit, and hath a lust to be conceiued. The Greeks in general termes haue described that season in this wise, namely, When the earth is hot and moist. *Virgil* giueth a precept to sow the common wheat Triticum, and the red bearded wheat Far, after the retrait or departure aforesaid of the Brood-hen Vergiliæ. As for Barly, he would haue it cast into the ground betweene the Æquinox in Autumne, and the winter Sun-sted: but Vetches, Kidney-beans, or Lentils, at the setting or going downe of the star Boote. Which being so, it would do well to digest the rising and falling both of these stars and also of others, into their set dayes; to shew (I say) at what fixed time they appear, and when again they are hidden. Some there be who are of opinion, that it is good sowing euen before the occultation of the said star Virgiliæ, but in a dry ground only and in hot countries: for so (say they) will the seed swell and mortifie the better; which the naturall humiditie only of the earth is sufficient to putrifie and prepare so, that when the next rain falleth, it will be ready to spurt and chit within a day. Others attend and wait seuen dayes after the retrait of the foresaid Brood-hen, for the rain that commonly falleth about that time. There be again that begin to sow in cold regions immediatly after the Æquinox in Autumne: but in hot countries they be later in their seednes, for fear that the corn would be winter-proud and grow ouermuch before the cold weather come. But all writers accord herein, that it is not good sowing before the winter Solstice, when the daies be at the shortest: the reason is verie pregnant and apparant, for winter seed if it be sown before mid-winter, will spurt and spring at the seuen-nights end; sow after that time, you shall haue it lie in the ground forty daies before it make any shew of comming vp. Many make hast and put their seed into the ground betimes, hauing this prouerbe vsually in their mouth, *Well may ouertimely and hasty sowing oftentimes faile, but late sowing shall euer misse and deceiue the master.* Contrariwise, others there are of this minde, That it were better stay vntil the spring to do it wel and surely, rather than to sow in a bad Autumne, and hasard the losing of all. If there be no remedie therefore but to take the spring season, a man must make choise of the time betweene the midst of Februarie [at what time as the West wind Favonius doth rise and begin to blow] and the Æquinox in March. Some haue no regard at all to the constitution and figure of the heauens in this case, thinking the rising and falling of stars, the course and motions of cœlestial bodies to be friuolous matters and nothing pertinent to this purpose, but content themselues only with obseruing the cardinall seasons of the yeare, and some other times, in a generality. In the spring (say they) sow Lineseed, Otes, and Poppies, and so hold on vnto the festiuall holydaies of *Minerva*, called Quinquatrus; like as at this day throughout all Lombardie and beyond the Po, they go by no other rule. As for Beans and the fine wheat Siligo, put them into the ground in the moneth of Nouember. Let the winter red wheat Far take his fortune and be interred, from the end of September, vntill the midst or fifteenth day of October. Others goe beyond that day, and continue their seednesse vnto to the Calends or first day of Nouember. Now as these men haue no regard at all to the speculation of Nature, and the course of the starres; so the other before named are giuen too much thereto, and wrapt they are so high among the stars and planets, that their owne eyes be dazeled therewith: and besides, their subtilties and quidities do blind others, considering that the practise H I L M

A ctise of these matters must passe through the hands of rustical peasants, who are so far off from conceiuing Astronomy, & the constellations aboue, that they know not one letter of the book, nor neuer learned their A. B. C. Howbeit, we canot chuse but confesse, that the true reason and knowledge of Agriculture, depends principally vpon the obseruation of the ord in heauenly bodies: for *Virgil* saith very wel, That before all other things, a husbandman should be skilfull in the winds, and haue the foreknowledge and prediction of them: also to haue an insight into the nature and influence of the starres, and in one word, to obserue both the one and the other; as well as the Sailers and mariners at sea. Certes, a hard peece of worke it is, and infinite; and smal hope I haue that euer I shal be able to driue into their heads that are so ignorant & grosse of conceit, this high learning and heauenly diuinitie, as touching the Planets, the fixed starres, B together with the reason of their orderly motions and cœlestiall powers: howbeit considering the great profit that may arise and grow therupon to mankind, I will cast a proffer and giue the attempt to make ploughmen Astrologers, or Astronomers at leastwise, if it may be. But first my purpose is, to lay open before their eies certain difficultys (which troubled also some of the auncient writers, and those not vnskilfull in this part of Philosophie) as touching the course and order of the Starres: which beeing not onely discouered, but also assoiled and cleared, their minds with better contentment may goe from the contemplation of heauen to the rest of Natures workes, and see those things by the effects, which they could not possibly foresee by their causes.

C

Chap. XXV.

¶ The times and seasons of the rising and setting of Starres, digested into order, as well by a *day as night,*

a Euening and mornin

IN the first place, there offereth it selfe vnto vs one difficultie aboue the rest, so intricate, as hardly is it possible to resolue vpon it; namely, as touching the very daies of the yere, how many they be, in number; and the reuolution of the Sunne, how and when he returneth againe to to the same point? For whereas some do account the solare yere to be 365 daies just, others adde thereunto certaine quadrants or foure parts of day and night together, to wit, six houres euery yeare, which beeing put together, make the fourth yeare Bissextile or Leape yeare: so as it is in D manner impossible to assigne the certaine daies and houres of the Starres apparition or occultation. Ouer and besides, how obscure, how darke and confused all this matter is, appeareth manifestly herin, That the times and seasons of the yere prefixed by ancient writers, fal not out accordingly; and namely, in the obseruation of the winter seasons & tempests by them set down: for one while you shall haue them to preuent and come sooner by many daies than ordinarie, which the Greekes call ἐγκυμάτιον: another while to draw back and come later, which they terme ὑπολύσιον. Yea and for the most part this happeneth, by reason that the influence of the cœlestiall starres reacheth sooner or later to the earth, and therafter sheweth the effects: so as, the common people, when they see the said foule weather past, and all cleare and faire againe, say then and not before, That such a planet or Starre hath performed his course, and is vpon the point E of his Tropicke or return againe. Moreouer, considering that al these occurrents depend much vpon those stars which be set & fixed in the firmament, yet shall ye haue the Planets play their parts besides, which by their motions and operations, worke no small effects vpon the earth, as we haue shewed before, and namely, causing betweene-whiles stormes of raine and haile out of course: no maruell then, if they trouble our heads and put vs out of our account, interrupting that order of the fixed Stars, vpon which we conceiued and built our hope of the faire season, and our new spring. And herin, not we only that be men faile of our reckoning, but other liuing creatures also be deceiued, which naturally haue much more sense and vnderstanding of these workes of Nature, than we, in as much as their whole life standeth thereupon: for the Summer-birds (as great fore-sight as they haue of such seasons and tempests) are ouer-taken and killed F by Winter frosts and cold, comming sooner than they looked for, and before they be gone out of the countrey, as also winter foules miscarrie by the hot weather of summer, continuing longer than it was woont, and holding on still after they be come. Hereupon it is, that *Virgil* expressely willeth vs to learne throughly the skill of the wandring Starres or Planets also, and principally giueth vs warning to marke the course of that cold Planet Saturne.

But

But now to come more particularly to the signs which fore-token the Spring: some there be G
that goe by the Butterflie, and hold that their brood comming abroad, is an assured token that
the Spring is come, for that these creatures so feeble, are not able to abide any cold: howbeit,
this was checked that very yere, wherin I wrote this Booke or History of Natures work: for seen
it was and marked very well, that 3 flights of them one after another were killed with the cold
weather that surprised them thrice, for that they were stirring too early, and came abroad ouer-
soon. Yea, and the very birds who are our guests in warm weather, visited vs fiue or sixe daies be-
fore Februarie, & made a goodly shew of a timely Spring, putting vs in good hope, that al cold
weather was gone: howbeit, there ensued a most bitter after-winter streight vpon it, that nipped
and killed them in manner euerie one. Hard and doubtfull therefore is the case, that whereas
first and principally we were to fetch our rule from the heauens to guide and direct vs, then af- H
terwards we should be driuen to goe by other signes and arguments meere coniecturall. But a-
boue all, the cause of this incertitude and difficultie, is partly the conuexity of the cope of hea-
uen, and partly the diuerse climats obserued in the globe of the earth, by meanes whereof, one
and the same star seemeth to rise at sundrie times in diuerse countres, and appears sooner or las-
ter to some than to others: and therefore the cause depending thereupon, is not in all places of
like validity, nor sheweth the same effects alwaies at the same times. And yet there is one diffi-
cultie more, arising from those Authors who writing of one and the same thing, haue deliuered
diuers opinions, according to the sundry climates wherein they were, at what time as they ob-
serued the figure and constitution of the heauens. Now were there of these Astronomers three
Sects, to wit, the Chaldæans, the Ægyptians, and the Greekes. To which there may be added a I
fourth, which among vs *Cæsar* the Dictatour first erected: who obseruing the course of the Sun,
and taking with him also the aduise of *Sosigenes* (a learned Mathematitian and skilfull Astro-
nomer in his time) reduced the yeare vnto the said reuolution. Howbeit, in this calculation of
his, there was found an error, and short he came of the marke, which he aimed at, by reason that
there was no Bissextile or leap yere by him inserted, but after 12 yeres. Now, when it was obser-
ued by this reckoning, that the sun had performed his reuolution sooner than the yere turned
about, which before was wont to preuent the course of the Sun, this error was reformed: and af-
ter euery fourth yeare expired, came about the Bissextile aforesaid, and made al streight. *Sosige-
nes* also himselfe, albeit he was reputed a more curious and exquisite Mathematician than the
rest, yet in three seuerall treatises that he made, retracting or correcting that in one booke that K
he had set down in another, seemed euermore to write doubtfully, and left the thing in as great
ambiguitie & vndetermined as he found it. As for these writers whose names I haue alleadged
& prefixed in the front of this present volume now in hand, they haue likewise deliuered their
opinions as touching this point, but hardly shal you find two of them in one & the same mind.
Lesse maruell then if the rest haue varied one from another, who may pretend for their excuse
the diuers tracts and climates wherein they wrote. As for those who liued in the same region,
and yet wrot contrarie, I canot tel what to make of them: howbeit, I care not much to set downe
one example of their discord & disagreement. *Hesiodus* the Poet (for vnder his name also there
goeth a Treatise of Astrologie) hath put down in writing the matutine setting of the star Ver-
giliæ (which is the occultation thereof by the raies and beames of the Sunne toward morning) L
to begin ordinarily vpon the day of the Æquinox in Autumne. *Thales* the Milesian saith, That
it falleth out vpon the fiue and twentieth after the said Æquinox. *Anaximander* writeth, That
it is nine and twenty daies after: and finally, *Euctemon* hath noted the 48 day following the said
Æquinox, for the retrait or occultation of the forenamed Brood-hen star Vergiliæ. Loe what
varietie there is among these deepe clearkes and great Astrologers.

For mine owne part I hold well with *Cæsars* calculation, and wil keep me to his obseruations
as neere as I can, for that the same wil fit best with our meridian here in al Italie. Yet neuerthe-
lesse I will not sticke to set downe the opinions of others, because my desseigne tendeth not to
one particular place alone, but I purpose and professe to represent vnto the reader the vniuer-
sall history of Nature, and the whole world. But my meaning is not to rehearse the names of e-
uery Author one by one (for that were a tedious peece of work, and would require a long train M
of superfluous words) but only to put down the regions of euery climate, and that as succinctly
and briefely as I can. Where, by the way I must aduertise the Readers, that they remember wel
this one thing, how when for breuities sake I name the land or region Attica, they must with-
all

A all vnderstand the Islands Cyclades: when I name Macedonie, I comprehend therewith Mag-
nesia and Thracia: vnder Ægypt I comprise Phœnice, Cyprus, and Cilicia: vnder Bœotia, the
regions of Locris and Phocis: and in one word, alwaies the tracts and Countries adiacent and
confining together. *Item*, In making mention of Hellespontus onely, I take together with it,
Chersonesus, and all the continent or main firme land, as far as to the mountaine Athos: in na-
ming Ionia, I reckon also Asia the lesse or Natolia, and the Isles thereto adioyning: vnder the
name of Peloponnesus I count Achaia, and other lands in that climat lying to the West. Fi-
nally, the Chaldæans shall make demonstration, as in a map, of Assyria and Babylonia. As for
Africke or Barbary, Spaine and France, maruell not if I passe them ouer in silence: for there is
not a writer in all these Nations, one or other, who hath either obserued or penned downe the
B time when these fixed stars rise or fall. Howbeit it were no hard matter to come to the know-
ledge thereof in those climats and countries also, by the meridionall lines and conformitie of
the Parallele circles, which I digested orderly in the sixt book of this work. For thereby a man
may vnderstand the vniforme agreement in the position of the heauen, not only for whole Cli-
mats and countries, but also for euery seueral city by it selfe, vnder the same meridian or Paral-
lel: following still the known paralels of these regions which we haue named, and taking with-
all the eleuation of any circle pertaining to euery such land as a man will seeke, and respectiue
to the rising of the stars, according to the equal shadowes throughout all those paralel circles.
Moreouer, it ought to be shewed and declared, that ordinarily the times and seasons haue their
temperature and influence euery foure yeres together: and those lightly return the same with-
C out any great alteration, from yeare to yeare duly according to the course and recourse of the
Sun, during that term: mary in eight yeares they sensibly do increase, namely by what time as
the Moon is in her hundreth reuolution.

Now all the knowledge of the heauens pertinent to Agriculture, standeth principally vpon
three sorts of obseruations, to wit, the rising of the fixed stars, the setting of the same, and the
four cardinal points, to wit, of the two Tropicks or Sunsteads, and the double Æquinox, which
diuide the whole yeare into foure quarters and notable seasons. Where note, that the rise and
fall of those stars before said is to be considered and taken two waies. For first when the Sun ap-
procheth vnto them with his beams, they be hidden and no more seen: likewise after his depar-
ture they shew themselues again: and as the one, me thinks, might haue bin more aptly called
D an Apparition than a Rising, so we should haue framed our tongue in common speech to haue * *Ortus & o*
termed the other Occultation, rather than Setting. Secondly, according as the said stars begin *casus Heliaci*
either to shine out or be hidden in the morning before the Sunne be vp, or at euening after the
Sun is set, they be said to rise and go downe, and thereupon are named Matutine or Vespertine, * *ortus & oc*
Oriental or Occidental, according as the one or the other hapneth vnto them in the twi-light, *sus cosmicus*
morning, or euening. Certes, when they are to be seene Matutine or Vespertine, it must be at
the least three quarters of an houre either before the Sun is vp, or after he is downe: for within
that space there is no looking after them. Moreouer, some stars there be that rise and fal twice.
But take this with you, ere I proceed further, that all this speech of mine is to be vnderstood of
the fixed stars, which being setled fast in the sky, moue not of themselues: and in no wise of the
E planets.

As touching the foure cardinal seasons of the yeare, whereby it is diuided into foure quar-
ters; limited they be according to the light more or lesse, and as the daies be longer or shorter:
for so soon as the winter Sunsted is past, the daies do lengthen; and by that time that 90 daies
and three houres be gon and past, they be iust as long as the night, and this is called the spring
Æquinox. From which very day, for ninety three days together and twelue houres, namely vnto
the summer Sun-stead, the daies be longer than the night, and so continue vntill the Autumne
Æquinox, at what time the daies and nights be equall againe; from which time they shorten
and decrease as they grew in length and increased before, for eighty nine daies together, and
three houres, vntill the foresaid winter Sunstead, when as the daies be shortest. And here you
F must note, that in all these additions of houres at this present, I mean those only that be Æqui-
noctiall, which diuide the day and night equally in foure and twenty parts, and not the com-
mon houres of any other day artificiall whatsoeuer. Also take this with you, that all these di-
stinctions and diuisions of the foure seasons, begin alwaies in the eight degree of those signes
vnder which the Sunne is at those times: as for example, The winter Sunstead or shortest day

of

of the yeare, called in Latine Bruma, falleth out in the eight degree of Capricorn, which lightly is vpon the *18 day before the Calends of Ianuary. The Spring Æquinox, when nights and daies be of a length, in the eight degree of Aries. Semblably, the summer Sunstead, or longest day of the yeare, is alwaies when the Sun is entred eight degrees into Cancer. Last of all, the other Æquinox in Autumne, when day and night is equall, lighteth vpon the eight degree of Libra. And certes, seldom or neuer shall you see any of these foure daies without euident shew of some notable change in the weather. Again, these cardinall seasons or quarters of the yeare admit also their sub-diuisions still into some notable and special times, obserued in the *very middle space from the one and the other. For betweene the summer Sunstead and the Æquinox in Autumne iust vpon the fiue and forty day after the same Sunstead, the retrait or setting of the star called in Latine Fidicula, *i.* the Harp, beginneth the Autumne. Likewise, betweene that Æquinox and the winter Sunstead or shortest day of the yeare, the Matutine or morning fall of the star Virgiliæ, vpon the three and fortieth day after the said Æquinox, setteth the beginning of the winter. So likewise vpon the fiue and fortieth day between mid-winter or the shortest day of the yeare, and the spring Æquinox, the blowing of the Western wind Favonius beginneth the Spring. And last of all, vpon the three and fortieth day from the sayd Æquinox toward the Summer Sunstead, at what time as the star Virgiliæ doth rise Matutine, begins the Summer

But to returne again to our Agriculture, begin I will at the Seednes of Frument corne, that is to say, at the rising or apparition of the starre Vergiliæ in the morning, without making any mention at all of other pety stars, for to interrupt the train and course of our treatise, & to heap difficulties one vpon another, considering that the fierce and vehement star Orion is departed a great way off from vs by that time. I am not ignorant, that many fall to sowing corne long before, and preuent this time, beginning their Seednes within 11 daies after the Æquinox in Autumne, namely, at the approch and rising of the star Corona, *i.* the Crowne; promising themselues assuredly to haue rain vpon it for certain daies together. *Xenophon* would not haue vs begin to sow before that God giue vs some good signe and token so to do. And *Cicero* our countryman expounding this saying of *Xenophon*, taketh the raines in *Nouember to be that signe which God giueth: whereas in very deed the true and vndoubted rule to goe by, is to make no great hast into the field for to sow, before the leaues begin to fall: and this euery man holdeth to be at the very occultation or retrait of the star Vergiliæ. Some, as we haue before said, haue obserued it about 3 daies before the Ides of Nouember. And for that the said star is so euident in the heauen, and easiest to be known of all others, called it is by the name of a garment hanging out at a Brokers shop. And therefore by the fall or retrait thereof, as many men as haue a care and forecast to preuent the couetous dealing of the merchant-Tailor (as commonly such occupiers lie in the wind for gain) guesse aforehand what winter will follow: for if it be a cloudie season when the star retireth, it threatens a rainy winter, and then these merchants presently raise the price of the clokes which they sel: but if the weather be faire and cleare at the setting or occultation thereof, it sheweth a pinching and hard winter toward; and then they hold other garments also very deare. But this Husbandman of ours, who cannot skill at all to looke vp and to learn the order and position of the heauens, must spy this signe of winter amongst his briers and brambles: he must find (I say) the time of Seednes as he looketh downe vpon the ground, namely, when he sees the leaues fallen and lying vnder his feet. Thus may a man know the temperature of the climat, and the yeare, according as he perceiues the leaues be fallen more at one time than another, sooner also in some places, and later elsewhere. For as the season is forward or late, as the climate also is affected, so are the trees knowne to shed their leaues accordingly. And in very truth this is the truest signe of all others. And the best thing therein is this, that being generall throughout the whole world, and yet peculiar to each place, it neuer faileth. A man might make a wonder hereat, if he did not see and remember, that vpon the very shortest day in the yere, euen in mid winter when the Sun is entred Capricorn, the herb Penyroyal vseth of it selfe to flourish, either set in chaplets, or otherwise hanging and sticking in the shambles; so willing is Nature to shew vs all her secrets, and to keepe nothing hidden from vs. For loe what signes and marks she hath giuen vs, wherby we might know the time of sowing corn: and verily, this is the only true and infallible direction grounded vpon approoued experience, and the same shewed first by dame Nature: for by this dropping & fall of leaues what doth she els teach

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L

M

A teach and counsell vs but to haue our eye vpon the ground, and to cast seed into it, assuring vs of a certain supply of dung and compost, by ouerspreading the ground, and cast seed into it, that soon will turne into muck? what doth she else (I say) but by couering the earth in this manner with leaues, shew how carefull she is to defend it against hard frosts and pinching winds, and in one word, thereby putteth vs in mind to make the more hast and get our seed vnder mould? As for *Varro*, he is of the same opinion for beans also, and willeth vs to obserue the said rule in sowing them at the fall of the leafe. Others are of this mind, that the best sowing thereof is in the full Moone. But for Lentils, we should attend the last quarter toward the change, to wit, from the 25 day to the thirtieth. Also, that Vetches must be sowed at the said age of the Moon: for in so doing we shall preserue such pulse from the naked fnaile. Howbeit, some others there be
B that indeed would haue these kindes of Pulse to be sowed at this time of the yeare and age of the Moon for prouender and forrage to be spent out of hand: mary if we would keepe the same for seed, then we should take the season of the Spring.

Besides those rules and tokens aboue specified, there is one more, which Nature vpon an extraordinarie prouidence ouer vs, hath presented vnto our eies after a wonderfull manner, which *Cicero* expresseth in these termes

Iam vero semper viridis, semperq; gravata
Lentiscus, triplici solita est grandescere fœtu:
Ter fruges fundens, tria tempora monstrat arandi.

C
The Mastick tree
All times, you see,
Is clad and richly dight,
With green in cold,
With fruit three-fold,
A faire and goodly sight.

As she therefore,
By Natures lore,
Doth fruit thrice yearely beare:
So thereby we
Know seasons three,
Our land to duly eare.

Of which three seasons, one is appropriate for the sowing both of Poppy and also of Lineseed. But since I haue named Poppy, I will tell you what *Cato* saith as touching the sowing thereof: vpon that land (quoth he) where you mean to sow Poppy, burn your winding rods, the cuttings
D also and twigs of vines, which remained and were left at the pruning time: when you haue burned them, sow wild Poppy seed in the place; for it is a singular medicine being boiled vp to a syrrup in honey, for to cure the maladies incident to the chawes and throat. As for the garden Poppy, it hath an excellent and effectuall vertue to procure sleep. And thus much concerning Winter corne and the Seednes thereof.

Chap. XXVI.

¶ *A summarie or recapitulation of all points of Husbandry: and to what outworks in the field a husbandman should be imployed, respectiuely to euerie moneth of the yeare.*

E
BVt now to compasse vnder a certain briefe Abridgement or Breviarie, all points of husbandrie together: At the same time before named [to wit, at the falling of the leafe] it is good also to lay dung vnto the roots of trees; likewise to mold and bank vines: and one workeman is sufficient for one acre. Also, where the nature of the ground will beare it, the husbandman shall not do amisse to disbranch and lop his tree-groues, to prune his vineyards, to hollow the ground of his seminaries and nourse-plots with mattocke and spade, and dresse the mould light; to open his sluces and trenches for water-course, to driue and drain it out of the fields; and finally, to wash his Wine-presses first, and then to shut and lay them vp dry and safe. *Item*,
F after the Calends or first day of Nouember, let him set no hens vpon egs vntill the winter Sunstead be past: when that time is come and gon, set Hens hardly, and let them couue 13 egs; marie better it were all Summer long to put so many vnder them; for in winter fewer will serue: howbeit neuer vnder nine.

Democritus giueth a guesse what Winter we shall haue, by the very day of the Winter Sunstead: for look what weather is then and for threedaies about it, the like winter (he supposeth)

will enſue. Semblably, for the Summer he goeth by the other Sunſtead or longeſt day of the yeare: and yet commonly for a fortnight about the ſhorteſt day in the yeare (to wit, during the time that the fowles Halcyones do lay, couve, and hatch their egs in the ſea) the windes lie, and the weather is more mild and temperat. But as well by theſe ſignes as all other whatſoeuer, we muſt gueſſe the influences and effects of the ſtars, according to the euent, within ſome latitude of time; and not ſo precisely to limit and tie them alwaies to certain daies prefixed, as if they were bound to make their appearance peremptorily in court, iuſt then, and faile not. G

Moreouer, in mid-winter meddle not at all with vines, touch them not in any hand, but let them alone. What then is the husbandman to do? Mary then (quoth *Hyginus*) after ſeuen daies be once paſt from the Sunneſtead, he is to refine his wines from the lees, and let them ſettle, yea and to poure them out of one veſſel into another, prouided withall, that the Moon be a quarter old. Alſo about that ſeaſon (to wit, when the Sun is in Capricorn) it is not amiſſe to plant cherrie trees, and ſet their ſtones: then is it good alſo to giue oxen Maſt to feed them; and one Modius or pecke is ſufficient to ſerue a yoke at one refection: allow them more at once, you glut them and fill them full of diſeaſes: but at what time ſoeuer you make them this allowance, vnleſſe you hold on thirty daies together, folke ſay, they will be ſcabbed and mangie when the Spring commeth, that you will repent for cutting them ſo ſhort. As for felling timber trees, this was the proper ſeaſon which we appointed heretofore. All other winter works for an huſbandman to be buſied in, would be done in the night for the moſt part: ſit vp he muſt late, and riſe betimes by candle light, and watch hardly about them, for that the nights be ſo much longer than the daies: let him a Gods name find himſelfe occupied with making Wicker baskets and hampers, winding of hurdles, & twiſting of frailes and paniers: let him thwite torch wood taperwiſe with links and lights: and when he hath by day light made ready and prepared thirtie poles or raiſes for vines to run on, and ſixty ſtakes or props to ſupport them, hee may in the euening make fiue poles or perches, and ten forks or ſupporters; and likewiſe as many early in the morning before day light. H I

But now to come to *Cæſars* reckoning of the times & digeſtion of the cœleſtial ſignes: theſe be the notable ſtars which are ſignificant and do rule that quarter which is between the winter Sunſtead and the riſing of the Weſtern wind Fauonius. Vpon the third day (ſaith he) before the Calends of Ianuarie, which is the 30 day of December, the Dog-ſtarre goeth downe in the morning: vpon which day in Attica and the whole tract thereto adioyning, the ſtar Aquila, [*i.* the Ægle] fetteth (by report) in the euening, and loſeth her light. The euen before the Nones of Ianuarie, *i.* the fourth day thereof, by *Cæſars* account [I mean for the meridian of Italy] the Dolphin ſtar riſeth in the morning, and the morrow after, the Harp-ſtar Fidicula; vpon which day, in Ægypt, the ſtar Sagitta [*i.* the Arrow] fetteth in the euening. *Item*, from that time to the ſixt day before the Ides of Ianuarie [*i.* the eighth day of that moneth] when as the ſame Dolphin goeth down or retireth out of ſight in the euening, vſually we haue in Italy continual froſt and winter weather: as alſo when the Sun is perceiued to enter into Aquarius, which ordinarily falleth out ſixteen daies before the Calends of Februarie [*i.* the ſeuenteenth of Ianuary.] As for the cleare and bright ſtar, called the ſtar Royal, appearing in the breaſt of the ſigne Leo, *Tubero* mine Author ſaith, that eight daies before the Calends of Februarie, to wit, the 25 day of Ianuarie, it goeth out of our ſight in the morning: alſo ouer-night before the Nones of Februarie, [*i.* the fourth day of the ſame moneth] the Harp-ſtar Fidicula goeth down and is no more ſeene. Toward the later end of this quarter, it is good and neceſſarie to dig and turne vp freſh mould with mattock and ſpade, againſt the time that roſes or vines ſhal be ſet, whereſoeuer the temperature of the climat will beare it: and for an acre of ſuch worke, ſixty labourers in a day are ſufficient to doe it well. At which time alſo old trenches and ditches would be ſcoured or new made. For morning worke before day the Husbandman muſt look to his iron tooles, that they be ground, whetted, and ſharpned; that their ſteles, helues, or handles, be fitted and ſet to their heads; that ſhaken tubs, barrels, and ſuch like veſſels, be new cowped, bound with hoops, and calfretted; that their ſtaues be well ſcraped and cleanſed, or elſe new ſet into them. And thus much of this Winter Quarter, as farre as to the comming of the Weſterne winde Fauonius. K L M

Now as touching the entrance of the new Spring, which is from the riſing of the ſaid winde to the Equinox in March; *Cæſar* ſets downe for it the time, which for three daies together is variable

A riable and inconſtant weather, to wit, ſeuenteen daies before the calends of March, which is the thirteenth of Februarie. Alſo 8 daies before the ſaid Calends, which is the 22 of Februarie, vpon the ſight of the * firſt Swallow; and the morrow after, vpon which day the ſtar Arcturus riſeth Veſpertine, *i.* appeareth in the euening. In like manner, *Cæſar* hath obſerued, that the ſaid wind hath begun to blow three daies before the Nones of March, to wit, the fift of March, juſt with the riſing or apparition of the Crab-ſtar Cancer. Howbeit moſt writers of Aſtrologie do aſſigne the firſt entry of the Spring and the comming of this wind, to the 8 day before the Ides of March, which is the eight of that moneth, when as the ſtar Vindemiator, *id eſt*, the Grape-gatherer, beginneth to appeare: at what time alſo the Northerly ſtarre called the Fiſh, ariſeth: vpon the morrow whereof, to wit, the ninth day, the great ſtarre Orion ſheweth himſelfe in his B likeneſſe. In the region Attica where Athens ſtandeth, it is obſerued, that the ſtar Milvus, *i.* the Kite or Glede, appeareth then in that climat. *Cæſar* moreouer noted, that the ſtar Scorpio riſes vpon the * Ides of March, thoſe fatall Ides (I ſay) that were ſo vnfortunate vnto himſelfe: alſo, that vpon the 15 Calends of Aprill, which is the 18 of March, the foreſaid Milvus, *i.* the Kite-ſtar, appeareth to them in Italie, and three daies after, the Horſe-ſtar is hidden toward the morning. This is the freſheſt, the moſt buſie or ſtirring interual or time between, that husbandmen haue; and yet therin they be oftenеſt deceiued, for commonly called they are not to their work the very ſame day that the wind Fauonius ſhould by courſe blow, but when it begins to be aloft; which is a point to be conſidered and obſerued with right great regard: for if a man would take heede and marke well, this is that moneth wherein God giueth vs that ſure and infallible C ſign which neuer faileth. Now from what quarter or coaſt this wind doth blow, and which way it commeth, albeit I haue ſhewed alreadie in the ſecond booke of this ſtorie, yet will I ſpeake thereof more diſtinctly and exactly anon; mean while, from that day (whenſoeuer it hapneth) on which that wind beginneth to blow, come it ſooner (as namely, when it is a timely and forward ſpring) or come it later, if it be a long winter (for it is not alwaies the * ſixth day juſt before the Ides of February) from that time, I ſay, muſt the ruſtical paiſants fettle to their work, then are they to goe about a world of toileſome labour, then muſt they plie their buſineſſe and make ſpeed to diſpatch thoſe things firſt that may not be defer'd & put off, then or neuer would their ſummer three month corne be ſowne, their vines be pruned in manner aboueſaid, their Oliue trees dreſſed and trimmed accordingly: Apple-tree ſtocks and ſuch like fruits, are then to D to be ſet and graffed; then is the time to be digging and deluing in vineyards, to remoue ſome yong plants out of their ſeminaries, and digeſt them in order as they muſt grow, and to ſupply their plots with new ſeed and impes: Canes and Reeds, Willows and Oſiers, Broom alſo would then ſome be ſet, and others cut downe: Elmes, Poplars, and Plane trees, ought then to be planted, as hath been ſaid before: then is the meeteſt ſeaſon to cleanſe the corne fields, to ſarcle and rid the winter corn from weeds, and eſpecially the bearded red wheat Far: in doing wherof, this muſt be the certain rule to direct the husbandmen, namely, when the root of the ſaid Far begins to haue foure ſtrings or threads to it. As for Beans, they muſt not be medled withall in that order, before they haue put out three leaues; and then verily they muſt be lightly gone ouer, and cleanſed rather with a light hooke, than otherwiſe. When Beanes be bloumed, for 15 daies to- E gether they ought not to be touched. As touching Barley, it would not be * ſarcled or raked, but in a drie ground, and when the weather holds vp. Order the matter ſo, that by the Æquinox in March, all your pruning and binding of Vines be done and finiſhed. If it be a vineyard, foure men are enough to cut and tie an acre of vines: and if they grow to trees, one good workeman will be able to ouercome fifteen trees in one day. This is the very time moreouer of gardening and dreſſing roſe-plots or roſiers [whereof I mean to treat apart and ſeuerally in the booke next following] of drawing vinets alſo, knots, and fine ſtorie works in gardens: this is the only ſeaſon to make trenches and ditches: the ground alſo would now be broken vp for a fallow againſt the next yeare, according to the mind and counſell of *Virgil* eſpecially, to the end that the Sunne might throughly parch and concoct the clots, and thereby make it more mellow for the Seed- F nes. Howbeit I doe like better of their opinion (as the more thriftie and profitable of the two) who aduiſe to plough no ground in the mids of the Spring, but that which is of a mean temperature: for if it be rich and fat, preſently the weeds will ouergrow and take vp the ſeams and furrowes: againe, ſay it be poore and leane, the hot weather comming ſo ſoon vpon the fallow, will dry it too faſt, ſpend all the moiſture, and kill the heart therof, which ſhould maintain the ſeed

* Whereupon the ſaid wind *Fauonius*, is called *Chelidonias* and *Ornebias*.

*13 of March: for vpon that day was he murdered.

i. the ſeuenth of Februarie.

* *Sarrito.*

to be sowne therein. *Cato* setteth downe the Husbandmens worke for the Spring time, in these G
tearmes. Cast trenches (quoth he) couch young branches, and interre them for seminaries by
way of propagation, in case the ground be strong, fat, and moist withal. Lay dung to your Elms,
Fig trees, Apple trees, and others of like fruit, to Oliues also doe the like: neither forget to ma-
nure and mucke your medow grounds; but al in a drie Moon and about the change. Such fields
as are not well watered, defend them as well as you can from the West wind Fauonius: downe
with superfluous weeds and rid them out of the way; but if they be hurtful besides, pluck them
vp by the roots. Cleanse Fig trees betweene, where need is: make new seminaries and nource-
gardens, and repaire the old. All this would be done before the vine begin to floure. Moreouer,
so soone as the Peare tree sheweth blossome, begin to plough leane, light, and sandy grounds,
but afterwards you may be bold to goe in hand with the fatteſt, fasteſt, and moſt wateriſh that H
be: let these (I say) be last tilled. And to conclude briefely, as touching this time of ploughing,
let this be the marke and rule to guide you; namely, to set into your worke and put plough in
ground, when you see either the Lentisk tree to shew the hope of her first fruit, or the Pear tree
to blossom and haue a white head. There would be also a third tilth or crushing of the ground,
obserued by the sea-onyon Squilla, among those hearbes which haue bulbous roots: likewise a-
mong floures, by the Daffodill. For as these doe bloume thrice, so they point vnto three times
of ploughing. For by their first blossom, they shew the first tilth or breaking vp of the ground,
by their middle flouring, the second fallow or stirring: and by their third, the last crushing.
Wherein a man may see the wonderfull chaine (as it were) that linketh this world together,
whereby all creatures therein contained, giue lightsome tokens and signes one to another. And I
this may be obserued also in the yuie (a thing verily not of the least and last regard) that must
not in any case be touched or medled withall, so long as Beanes be in their bloume; for that is
the very time and meane to hurt it most and kill it for euer. Now, as some plants there be that
serue for signes vnto others, so there be other that carie about with them their own mark, as for
ample, the fig-trees, for looke when they put forth in the head a few leaues hollow, and with the
edges turning vpward in manner of a sawcer or goblet, be sure that is the right season and best
time to plant them.

Now is it time to returne from whence we were digressed, namely, to the calculation of the
principall times and quarters of the yeres, and namely, to the Spring Æquinox, which seemeth
to be come and gon alwaies by the 8 day before the Calends of April, to wit, the 25 of March. K
From which day forward, by *Cæsars* calculation, the calends of April, to wit, the first day of A-
pril, are significant, as whereupon the star Vergiliæ, *i.* the Brood-hen, begins to rise or appear in
the morning; howsoeuer in Attica and the parts therabout, the same star seems to set or be hid-
den in the euening vpon the third day before the Nones of Aprill, *i.* the third of that moneth:
and the morow after, the same star doth the like in Bœotia. Howbeit, according to *Cæsars* Ephe-
merides for Italie, and the Chaldæans for Assyria and Babylon, the foresaid starre goes downe
or retireth out of sight vpon the Nones of Aprill, *i.* the fifth of Aprill: at what time in Ægypt,
as well *Orion* as his sword [both stars in heauen so called] begin to be hidden. After *Cæsars* rec-
koning, the sign or star Libra setteth in Italy the sixt day before the Ides of Aprill, which is the
eight of the same moneth, and signifieth store of raine. The fourteenth day before the Calends
of May, which is the eighteenth of April, the * Suculæ (a violent and troublesome star causing L
stormes and tempests raging both on land and sea) goe downe at euening in Ægypt, but in At-
tica two daies before, to wit, the sixteenth of Aprill: and in Italy, by *Cæsars* booke, the day be-
tween both; that is to say, the seuenteenth day of the said moneth; the influence whereof is ef-
fectuall for three daies together: but in Assyria it falleth out twelue daies before the calends of
May, *i.* the nineteenth of Aprill. This is the star or signe in the heauens commonly named Pa-
lilicium; because the eleuenth day before the Calends of May, *i.* the 20 of April, the very birth-
day and memorial feast of Rome cities foundation (on which day the weather commonly clea-
reth vp and is faire again) gaue folk a notable occasion of obseruing the said stars retreat or oc-
cultation: howsoeuer the Greekes haue tearmed them * Hyades, by reason of the rain and foule
weather which ordinarily they bring. And wheras our countrymen haue called them in Latine M
Suculæ, *i.* porkets or smal swine (according to the apparent Greeke denomination, which they
thought to be deriued of ὗς, founding in Latine *Sus*, *i.* a swine, their supposal was false, and be-
wraied their great ignorance. Moreouer, *Cæsar* noteth the eighth day before the Calends of
May,

* or *Hyades*, which some say are fiue in number, as *Hesiod*: others 7, as *Proclus*.

* Vere nobis horis, id est, de pluuia.

A May, which is the 24 of Aprill, for the time that the star Hœdi, *i.* the Kids, do rise in Italy: but
the next day after, they are obserued to appeare in Ægypt, the morrow following, within Bœ-
otia and Attica, the Dog-star is marked to be hidden & gon in the euening, when as the Harp-
star is seene in the morning. Now the day after that, which is the 5 day before the Calends of
May, *i.* the 27 of April, in Assyria Oryon is quite hidden, and two daies after, the Dog-star. Al-
so the sixt day before the Nones of May, which is the second of that moneth, *Cæsar* obserueth,
That in Italy the foresaid stars Suculæ, rise matutine and shew in the morning: like as also the
rainy Goat-starre Capella, vpon the eigth day before the Ides of May, which also is the eigth
day of that month, and the very same day the Ægyptians do obserue in their countrey, that the
great Dog-star goeth downe in the euening, and is no more seene. Thus you see how these fixed
B starres and signes aboue rehearsed do ordinarily keepe their courses, ruling and gouerning this
time between, to wit, from the Spring Æquinox in March, vnto the sixt day before the Ides of
May, which is the ninth of the said moneth. During the first 15 daies of which halfe quarter,
the husbandmen must make haste and take in hand that work that he was not able to go through
with and dispatch before the Æquinox; knowing full well, that vpon neglect of this businesse,
arose first, the opprobrious reproches that vine-pruners and cutters doe heare on both sides of
their eares, from passengers and waifaring men, by way of counterfeiting the song of that Sum-
mer-bird which they call the Cuckow. for it is counted so foule a shame, worthie a checke and
rebuke, that the said bird should come and find a pruning hooke or bill in a vine at that time of
the yere; that folk therefore stick not to let flie at them bold taunts, & broad biting scofs euen
C in the first beginning of the spring, And verily as these birds, so their song counterfeited in this
sort, seemeth to carrie an ominous and cursed presage with them. See how the least things be-
longing to Agriculture, are guided and carried by naturall reasons! As for the later end of this
foresaid time, it must be employed in the sowing of Panicke and Millet; for it is ordinarie and
vsual to sow this kind of graine after that hastie Barley is ripe, and also vpon the the very same
lands where it grew. Now the signe common to them both, testifying as wel the ripenes of one,
as the Seednes of the other, are the glo-birds or glo-worms Cicindelæ, shining in the euening
ouer the corne-fields, for so the rustical paisants and country clowns cal certain flies or worms
glowing and glittering star-like; and the Greeks name them Lampyrides: wherein we may see
D the wonderfull bounty and incredible goodnes of Nature, in teaching vs by by that silly crea-
ture.

Chap. XXVII.

¶ *That Husbandmen should not gaze at starres so much, but rather goe by the seasons of the yeare meet for sowing. Also, that they should marke the rising, the setting, and the course of the Sun in some hearbes. And of the rising and setting of other starres.*

E Nature contented not her selfe to assemble a troup of starres together in a knot (I meane
the Brood-hen Vergiliæ, wherby it is a sign in heauen aboue, conspicuous ynough alrea-
die, and of great mark) but she would needs giue the Husbandman other starres beneath
vpon the earth, as signes to shew him the true seasons and times when and how to go to worke:
as if she cried out and spake vnto him after this manner: Why shouldest thou looke vp to the
heauens, thou that art to till the ground? Why keepest thou a seeking among the stars for thy
countrey worke? Take thy rest and repose thy wearied limbs good man, for the nights be now
shorter than they were: to bed therefore, for thou hast but a while to sleep: Behold I scatter and
spread here and there among thy very weeds and grasse growing vpon the ground, other especi-
all shining stars, and those I represent vnto thine eies in the euening, and when thou doest vn-
yoke and giue order thy daies work: and that thou shouldst not either plead ignorance, or negle-
ct the same, I prouoke thee to regard and looke thereat, as a strange wonder. Seest thou not
F these flies or glo-birds aforesaid couer their bright and glittering light, resembling sparckles
of fire, when they keep their wings close together, and carrie fire-light about them euen in the
night? More than so, I haue giuen thee certaine hearbs to tell thee what it is a clocke, and how
the day goes: and to ease thee more, that thou needst not take the pain to auert thine eies away
from the earth where thy worke lies, and cast them so much as vp to the Sun, loe the hearb He-

liotropium and the Lupine turn about with him. What ſtandeſt thou ſtaring ſtill into the sky, G
and holdeſt vp thy noſe aloft into the aire ? why art thou amuſed vpon the courſe of the ſtars,
and ſearcheſt into heauen ? Haſt thou not I pray thee another Brood-hen ſtar, other Vergiliæ,
I ſay, euen before and vnder thy very feet, I mean theſe prettie glo-wormes ? Surely theſe come
duly at their ſet days: theſe keep time iuſt with thoſe of the heauen, and ſo long as they appeare
and ſhine aboue, theſe glo and glitter beneath: as if they were linked to that ſtar by ſome neere
alliance & affinitie : in ſuch ſort, as a man may reſolue & hold for certain, that engendred they
be no otherwiſe but by the influence thereof, and are the very chickens and brood of the fore-
ſaid Hen. And therefore conclude we may, that whatſoeuer ſoweth his ſummer corn, and looks
to reap fruit accordingly before theſe are to be ſeen, deceiueth himſelfe, and loſeth all his coſt
and pains. In this meane time and ſpace between, the prettie Bee commeth abroad, and telleth H
vs that Beanes bloume, for it is the Beane bloſſome that calleth her forth of her hiue.

Wouldſt thou know another ſigne yet, that winter is paſt and all the cold clean gon ? when
thou ſeeſt the Mulberry tree to bud & put out yong leaues, fear no more froſt nor hard weather
to doe any harme for that yere. Then (hardly) go to thy worke appropriat for this ſeaſon: now is
it good to plant yong ſions and quick-ſets of Oliues; now is the time to ſcrape and cleanſe here
and there where need is, the old oliue trees; and now would meddows be watered, euen preſent-
ly after the Æquinox. What is elſe to be done in the field this Spring time ? Mary, ſo ſoone as
the graſſe in the meadow is grown to a ſtem and begins once to ſpindle, then letforth the water,
and draine your meddowes. Then do the Vines looke for to be disburgened and rid from their
ſuperfluous leaues and needleſſe branches. And herein there is a certaine gage let, and a rule to I
goe by, namely, when as the ſaid burgeons are ſhot out foure-fingers in length. Where, note by
the way, that the disbranching of an acre in vineyard, is one mans work a day and no more. This
is the ſeaſon to giue corne lands their ſtirring, that is to ſay, the ſecond tilth or fallow. As for
the ſarceling or weeding of [Winter] corne, it would be done within twentie daies. For let this
Æquinoctiall ſeaſon paſſe, it is thought that ſarceling and weeding will hurt not only corne,
but vines alſo. To conclude, this is the very time alſo to waſh ſheepe.

And now to come againe to our ſtars where we left. The morrow after the riſing or apparitio-
on of the ſtar Vergiliæ beforeſaid. *Cæſar* reckoneth, that the ſign Arcturus loſeth his light and
is hidden in the morning. Alſo, that the third day before the Ides of May, to wit, the 13 day of
that month, the Harpe ſtar ariſeth and begins to ſhine. Moreouer, twelue daies before the Ca- K
lends of Iune, which is the 21 day therof, the Kid-ſtar goeth down in the euening: at what time
as in the region of Attica the Dog-ſtar alſo ſetteth after the ſame manner. The next day after
(by *Cæſars* account for the Meridian of Italy) Orions Sword beginneth by little and little to re-
tire and goe out of our ſight. The third day before the Nones of Iune, *i.* the third day of that
month (after *Cæſars* Ephimerides for our climate of Italie, as alſo according to the Chaldæans
calculation for the Meridian of Aſſyria) the Eagle-ſtar beginneth to riſe and appeare in the e-
uening. In which region, Arcturus goeth downe, and we loſe the ſight thereof in the morning,
eight daies before the Ides of Iune, which is the ſixt of the moneth: how ſoeuer with vs here in
Italie, he ſetteth two daies later. As alſo two daies after that, *i.* the tenth of Iune, the Dolphin
ſtar appeareth and giueth light in the euening. But ſeuenteen daies before the calends of Iuly, L
which is the fifteenth of Iune, we in Italy ſee the riſing of Orions Sword, which they in Æ-
gypt do obſerue foure daies after. And eleuen daies before the ſaid calends, to wit, the one and
twentieth day of Iune, the ſame ſtar (I meane the Sword of Orion) beginneth to goe down and
be obſcured in Italy, if *Cæſars* Almanack be true. Now are we come to the eight day before the
Calends of Iulie, namely, that four and twentieth day of Iune, the very longeſt day and ſhorteſt
night of the whole yeare, and the Summer Sunſtead. In this ſeaſon alſo be vines disburgeoned
and cleanſed from their vnprofitable leaues and branches: then required it is, and care would be
had, that an old Vineyard ſhould haue once digging, and the new, twice. This is the time of
ſheepe-ſhearing. Now, would Lupines be turned in with the plough, for to enrich and manure
the ground. Now are the lands to be cruſhed and ſet vp againſt the ſeed time. Now Vetches
would ſtand no longer, but be cut for to make forrage. Beans alſo would be now mowed downe: M
and thraſhed out of the way ſoone after.

CHAP.

A

CHAP. XXVIII.

¶ *Of Medowes and lay grounds for hay and paſture. The manner how to refreſh and repaire a medow. Of ſith-ſtones and whet-ſtones: of Sithes and Sickles. Alſo, the time for ſowing corne, and the deſcription of thoſe fixed ſtarres that gouerne this ſeaſon.*

THE ordinary ſeaſon to mow medowes, is about the Calends or beginning of Iune. And ve-
rily, albeit theſe kind of grounds ask leaſt care and toile about them for to be maintained,
and ſtand the Husbandman in as little charges, yet ſomething would be ſaid thereof, and
B theſe few rules following obſerued. Firſt therfore, a ground would be hained in, left lay, and kept
for graſſe and hey, which is for ſoile good and fat, for ſcituation lying either low and moiſt, or
elſe hauing water at com.mand from a brooke or riuer neere at hand: but aboue all, if it be poſſi-
ble, it muſt lie ſo, that it may haue the benefit of the rain by letting in land-flouds into it (run-
ning along the lanes and high-waies) for to refreſh and water the ſame. Alſo it is paſſing good
otherwhiles to plough vp a medow ground (for the graſſe will come and grow afterwards the
better) ſo it be wel harrowed or raked thereupon, and laid euen and leuel. Prouided alwaies that
hey-ſeeds, floures, & al, be ſowed vpon it (ſuch as be found in hey lofts and ricks, or els that ſhed
out from the rack into the crib or manger) which would be don before the ſame ground be har-
rowed as is aboueſaid. Howbeit, neither ought a medow that is laid for hey and paſture, be wa-
tered the firſt yere, ne yet graſed with cattell, before the ſecond math; for feare leaſt the beaſts
C pluck vp the graſſe quite ere it be well rooted, or kill the heart therof by ſteining and trampling
it vnder their feet. Moreouer, it is to be noted, that ſuch medow grounds in time will age (as it
were) and decay, in which regard, they ought to be helped and reſtored to their heart againe, by
ſowing therein either Beans, Rapes, Navews, or Millet: and when you haue taken a crop of one
of theſe from thence, the yeare following they would be ſowne with ſome Frument or bread-
corne: and ſo the third yeare left lay for medow again. Ouer and beſides, this would not be for-
gotten, that at euery math, ſo often as the graſſe is mowed for hey with the ſyth, there come one
after with an hooke, to cut downe thoſe tufts and manes which the mowiers paſſed ouer & left
ſtanding behinde them: for there is nothing worſe for a medow, than to ſuffer graſſe grow to
D feed. The beſt hearbe in a medow is the Clauer graſſe or Trefoile: next vnto it is the common
graſſe called Gramen, *i.* Coich or Dogs-tooth: the worſt is * Mimmulus. Alſo the Camocke or * Some read *Nummulus*, i *Nummulus* is Penny-graſſe.
Whin, called Reſt-harrow, and ſuch like codded graſſe, is not for mowiers, for they cry out vpon
ſuch, and curſe it. Moreouer, they cannot away with the herbe Equiſetis, *i.* Horſe-taile, ſo called
for the reſemblance it hath to an horſ-taile or mane.

The fit time to mow downe graſſe, is when the ſpike or head thereof beginneth once to ſhed
floures, and to wax ſtiffe: for in no caſe muſt it ſtand vntil it be dr and withered. Be not too late
(quoth *Cato*) in your hey harueſt, but down with your medows, before the ſeed of your graſſe be
ripe. Some, the day before that they ſet ſyth into their medows, water them, if there be a brook
at hand to be let in. And indeed the beſt cutting downe of graſſe is preſently vpon ſome good
E dewes that haue fallen ouernight. * In ſome parts of Italy the manner is to cut their medowes * Haply he meaneth the ſecond math.
after corn harueſt. Moreouer, in old time it was more coſtly and painfull to mow (by far) than it
is now adaies: for they vſed no other whetſtones, but ſuch as were known & ordinary, as brought
out of Candy and from beyond ſea; which would not giue an edge to their ſythes and make
them keen, without they were whetted with oile (as Barbers do their raſors, & grauers their fine
chezils and caruing yrons:) and to that purpoſe the mowier went euer with a horne full of oile,
tied faſt to his ſhanke. Since which time there haue bin found in Italy other manner of grind-
ſtones, with water, which will bring any yron toole to an edge quickly, as wel as a file. But theſe
water grindleſtones ſoone get a ſwarth and preſently become greene.

As touching the very Sythes, there be two ſorts of them. For thoſe of Italy be ſhorter than
F other, eaſie to handle and weld, and it were among buſhes, briers, and brambles. In France where
their fields and medows be large, they go a nearer and ſhorter way to worke, for they make no
more ado, but cut the graſſe down at the middle, and let that alone which is ſhort. Our mowiers
here in Italy, take but one hand to it, and that is commonly their right, and ſo cut downe their
graſſe: thus you ſhall haue a man ordinarily in one day go ouer an acre and cut it down cleane.

Alſo

Alſo it is one mans work to bind the hay of one acre into bottles: and vſually you ſhal haue in G
* Which is almoſt three of our falc lodes. ſo much ground * 1200 prety ones, of foure pound weight apiece. So ſoon as the graſſe is cut down and laid in ſwath, it muſt be tedded, brought into windrowes, and turned eftſoones with the Sun: neither ought it to be cocked vp but dry: for otherwiſe, if this be not carefully looked vnto, you ſhall ſee it reeke and ſmoke againe by the morning, for the heate that it hath caught within: but let the Sunne take it beſides, you ſhall be ſure to ſee the cockes kindle and be of a light fire.

So ſoon as this firſt graſſe is down and the hay made, the medow muſt preſently be watered
* Some call it woodcock hey again, to the end there may be a ſecond math of rowen hay in * Autumne, which the Latins cal Cordum. In the territorie of Interamna they vſe commonly to mow their medowes 4 times a yeare, yea, though they lie high and far from the benefit of water. And in moſt places of Italie thrice is ordinarie: and the rowen graſſe afterward commeth vp ſo thicke and high for paſturage and forrage, that it yeeldeth as great a benefit as the crops of hay before: mary, to raiſe this commoditie and gain thoſe know full well who are drouers of greater cattell, breeders alſo of yong colts, and principally Chariottiers that keepe choach-horſes; for all theſe haue the beſt means to imploy this graſſe for their moſt behoofe. H

To proceed now to the conſideration of the heauens. The ſummer Sunſtead falleth out alwaies [in Italy] to be iuſt vpon the 24 day of Iune, at what time as the Sunne is entred eight degrees within Cancer, as hath bin ſaid before. This is that great point & Tropick of the world: now is the heauen in moſt force, and the Sun at the higheſt of his power and vertue. From the midwinter or ſhorteſt day of the yeare, vnto this preſent, during the ſpace of ſixe moneths the I daies lengthen: and now the Sunne being paſſed far into the North, and hauing mounted and raught to the higheſt pitch of his intended laborious iourney, beginneth to turn againe from this Tropick of Cancer in the North, and bendeth his courſe toward the other Tropick of Capricorn in the South, intending by this means for other ſix months to lengthen the nights and to ſhorten the daies proportionably. Which the husbandman no ſooner ſeeth, but hee taketh his opportunitie, and woteth well, that now is the time wherein he muſt of neceſſitie make haſt to gather and inne the fruits of the yeare, each one reſpectiuely in their ſeueral ſeaſons: now or neuer ought he to lay in his prouiſion againſt the winter: now muſt he arme and prepare himſelfe, no remedie, to withſtand the rigour of cold and froſty weather: and therefore meet it was, that dame Nature, our kind Nurſe and tender mother, ſhould giue vs warning hereof, and fore- K ſhew this alteration of the yeare, by moſt vndoubted and infallible arguments. Hereupon ſhe hath preſented theſe marks and ſignes to the husbandman, & brought them euen to his hand, commanding ſundry trees vpon that very day of the Sunſtead to turne their leaues toward the Sunne, as if ſhe pointed vnto them by the finger, and ſhewed how that Planet began to retire from whence he came: ſo willing ſhe is, not to conceale from him theſe ſecrets, that ſhe hath not ſet theſe marks vpon wild and ſauage trees far remote, out of the way, (becauſe ſhee would not haue him take ſo much pains as to go into deſart forreſts, vnpaſſable welds and mountains, to ſeeke for the ſignes and tokens aforeſaid) ne yet vpon ſuch as grow within good townes and cities, much leſſe then thoſe that ſerue and are in requeſt for arbors and vines onely in Hortyards and gardens of pleaſure, that he ſhould be faine to leaue his ferme in the country and go L thither (and yet theſe trees alſo teſtifie of the Sunſtead and his returne:) what hath ſhe done then? Mary ſhe hath cauſed the oliue tree, which he ſeeth euery houre planted at his very foot, to turne about her leafe: ſhe hath willed the Linden, a tree that hee hath recourſe vnto euerie foot for a thouſand vſes, to doe the like: ſhe hath enioyned the white Poplar or Aſpe alſo the ſemblable, wedded as it is ſo commonly to Vines. Haſt thou not enough yet, (quoth ſhe) and will not all this make thee perfect? Looke then to the Eime, at the foot whereof thou planteſt thy Vine, and which thou ſeeſt continually indowed and inriched therewith, I wil make it alſo to turn the leafe when the Sun returnes. Thou ſtrippeſt her of her leaues and branches for thy cattell to eat and brouſe; thou getteſt vp into it for to prune the Vine; How canſt thou chuſe but ſee the leaues turned? How canſt thou be ignorant, but take knowledge of the Solſtice M and Suns return? Surely that ſide of the leafe which was from the Sunne but yeſterday, is now clean contrary and looks toward him; and in one word, all are turned vpſide down. Thou occupieſt the oiſier and willow twigs euer and anon, to bind and tie one thing or other; loweſt they grow of all the reſt, and higher thou art than they by the head: neuer looke vp nor caſt thine eye

A eie aloft for the matter: thou ſhalt ſee how I wil haue them alſo, growing euen vnder thy noſe, to turn their leaues about and follow the Sun. Why complaineſt thou and whineſt, ſaying, I am a ſimple countrieman, I am not book learned, I neuer went to Grammer ſchoole, and I wot not what? Certes, I cannot do withall if thou be ignorant of the heauens, and canſt not skill of the cœleſtiall ſignes and courſe of the ſtars: it ſhal not be long of me, but thou maiſt be an Aſtronomer and Clearke ſufficient. For if all this teaching wil not ſerue, in caſe, I ſay, thine eies wil not inſtruct thee enough to learne theſe ſignes: one ſigne more will I preſent vnto thine eare. Doe but liſten to the groning tune and pitiful mone that the Quoiſt and Stocke-doue makes: and neuer think that the Sunſtead is paſt, before ſhe haue left ſinging, and that thou ſeeſt her couue and ſitting vpon her egs.

B But now to go on ſtill with our Aſtrologie and Speculation of heauen as we haue begun: among thoſe ſtars that rule this ſeaſon from the Sunſtead beforeſaid, vnto the ſetting or occultation of the * Harp-ſtar, *Cæſar* ſaith, that ſix daies before the Calends of Iuly; to wit, the 26 of * *Fidicula.* Iune, Orion riſeth to the inhabitants of Italy: how ſoeuer the ſtar called Orions * girdle, appea- * *Zone.* reth not to the Aſſyrians before the fourth day of Iuly, vpon which day in Egypt the ſtar Procyon, *i.* the fore-runner of the Dog-ſtar Syrius, ſheweth in the morning, and commeth in very hot and fierie: and ſurely what Latine name this ſtar ſhould haue among the Romanes, I wot not, vnleſſe we would haue it to be Canicula (*i.*) the leſſe Dog-ſtarre, according to the pourtrait that it ſeemeth to reſemble among thoſe fixed ſtars in the firmament: and yet is this a ſigne in the heauen of great marke and conſequence, as anon we will declare more plainely. The third C day before the Nones of Iuly, *i.* the fift of the ſaid moneth, after the Chaldæans account in Syria and Babylon, the ſtar named Corona, *i.* the Crowne, goeth downe in the morning: but on the very ſame day to the people of Attica, Orion is ſeene to riſe all whole as he is. The euen of the Ides of Iuly, which is the 14 of that moneth, the ſame Orion ceaſeth to be ſeene of them that dwell in Egypt: and ſixteen daies before the Calends of Auguſt, to wit, the ſeuenteenth of Iuly, the foreſaid ſtar Procyon riſeth to them in Aſſyria. The morrow after, which is the 18 day, all Writers in manner doe agree vpon the riſing of that ſignificant and notorious ſigne, which commonly we call the Dog-ſtar; to wit, when as the Sun is entred the firſt degree of Leo, which falleth out to be the 23 day after the Summer Sun-ſtead. And in truth both ſea and land doe find and feele the arriuall or comming of this ſtar, yea, and many a wild beaſt beſides, according D as we haue ſhewed already in place conuenient. Neither is this ſtarre leſſe worſhipped and adored than thoſe renowned Planets which carrie the names of gods and goddeſſes, and haue Diuine honours done vnto them. He it is that inflameth and ſetteth the Sunne on fire: to him is imputed the greateſt cauſe of that extreame hot weather during the canicular daies. Two daies before, which is the fifteenth of Iuly: on which day the Ægle ſtar goeth downe in the morning, and then the Eteſian winds (called the Auant Curriers) begin, which *Cæſar* thought were not felt nor knowne in Italy vntill eight daies after, namely, the three and twentieth of Iuly: on which day the Eagle ſtar is knowne to ſet and goe out of ſight in the region of Attica and that tract, in the morning. As for the Roiall ſtar ſeated in the breaſt of Leo, *Cæſar* affirmeth, That it goeth downe and is all hidden betimes in the morning, the thirtieth day of Iuly, which is three E daies before the Calends of Auguſt. Now the eight day before the Ides of Auguſt, which is the ſixt day of the moneth, the one moity or halfe of Arcturus goeth downe: but the third day before the ſame ides, which is the eleuenth of that moneth, the Harpe ſtar by his occultation or going downe, beginneth Autumne, according as the ſame *Cæſar* noteth, but indeed and verily, as it hath bin found by true demonſtration, it is the ſixt day before the Ides; to wit, the eight of Auguſt. This halfe quarter or ſix weeks ſpace, is that which determineth of vines and vintage, by the meanes of that ſtar which wee called Canicula, the very ruler indeed ouer Vineyards, and whereupon dependeth the good or bad ſeaſon for all our grapes and wine the next yeare. From hence it is, and not otherwiſe, that the vines are ſaid to be blaſted, & the grapes burnt (as it were) to a coale. No haile ſtormes, no tempeſt of wind or raine is comparable hereunto, nor doth the F like harme to corn and grapes: this cauſeth many a time ſcarcitie, and bringeth extream dearth and famine, which neither haile nor tempeſt doth. As for theſe tempeſts, they indomage haply and hurt ſome fields here and there: but the blaſt beforeſaid plagueth whole countries, far and neare. Howbeit, it were no hard matter to deuiſe how to withſtand and remedy this miſchiefe, but that men haue more pleaſure to take occaſion for to blame Nature & her workes, vnder pre-

tenee

tence and colour of such vntoward blasts, than to seek and find means to do themselues good. It G
is reported of *Democritus*, the first Philosopher who vnderstood himselfe, and afterwards shewed
vnto the world, the great affinity and agreement that was between heauen and earth (which stu-
dy of his the richest and wealthiest citizens where he liued, seemed to scorne and despise) fore-
seeing by the course of the starres, to wit, by the rising that would be of the Virgiliæ or Broodhen
(according as I haue shewed already, and wil anon declar more at large) that oliues would faile
that yere, and consequently a dearth insue of oile; bought vp all the oile in that tract & coun-
try, which as then for the hope of great plenty of Oliues, bare no price: whereat the great mer-
chants of the city (who dreamed of nothing lesse than of a scarcity of oile, considering the oliues
made so faire a shew vpon the trees) were astonied and maruelled much, that *Democritus* so learned
a Philosopher, & a man who they knew, was wont by his profession to content himself with H
pouerty, to set his mind vpon nothing so much as a quiet life, and wholly to buse his braine in
attaining of knowledge and learning, was now on a sudden become a merchant. In the end, they
perceiued what the cause was, & acknowledged his diuine skill in foreseeing & preuenting a
dearth, and he for his part shewed plainly, That it was not auarice & desire of lucre that moued
him to take this course, but to let the world know, that if he were so disposed, hee could by the
means of his learning only, be soon a rich man (as indeed he grew hereby to exceeding wealth)
for presently of his own accord he restored again to the former owners, who God wot were dis-
pleased with themselues for that they had don, & wished with all their hearts, that they had met
with the like bargain; he remitted (I say) all this commodity which he had gotten into his own
hands, at their own price: resting herein, that he had made good proofe, how soone and easily he I
could be rich when he would. Long time after him, *Sextius* one of our Roman Philosophers, did
the like at Athens, & after the same maner: wherby we may see, in what stead learning and lite-
rature serueth, if a man will imploy the same to his own benefit. And I care not much verily to
giue the countriman a taft therof, as much as concerns the cause of the Blasting aforesaid, & to
intermeddle the same with his rustick affairs, but as plainly and with as great facility & light-
somnesse as possibly I can. Most are of this opinion & haue deliuered in writing, that as wel the
blasting in corn called Ruligo, as the findging & burning of vines named Carbunculus, proceed
from certain dews setling vpon them, which caught a caustick quality from the Acrimony and
extraordinary heat of the Sun. This conjecture and reason of theirs, I hold in some part to be
false, for the Sun neuer doth harm either to the one or the other in this respect; but looke what K
blast soeuer it be that findgeth or burneth corn and vines, it is occasioned by cold only: & if you
take good heed and mark how this commeth about, you will say it is cleare & past all perad-
uenture: for first & formost this is well known, that it neuer hapneth but in the night, or at least-
wise before the Sun is risen: so as we may conclude wel & truly, that all this dependeth vpon the
influence of the moon. For neuer shall a man see any of these hurtful blasts, but either about the
change or full of the moone, namely, when she is inher greatest force: for at both these times, as
well in the coniunction with the Sun, as in opposition, powerfull she is, and in some sort may be
termed Full, as I haue many a time already said. But at the change, look what light she receiued
from the Sun the same she sendeth all vp again to heauen. Great difference therefore there is in
the effects of the moone in both these habits, and the same very euident and apparant: for be it L
in summer, hotte st shee is in the change; but in winter, cold: contrariwise, the moone in Sum-
mer being at the full, maketh cold nights, and in winter is warme: the cause whereof is plaine
and manifest. Howbeit, *Fabianus* and the Greeke writers, render another reason: for in summer
time, the moone being in coniunction with the Sun, and meeting with him when he is in a cir-
cle neareſt vnto vs, must of necessitie be inflamed with the fire that it receiueth from the sunne,
so neare vnto her and vs both: whereas contrariwise, during winter, in the time of the change or
conjunction, she cannot chuse but be cold, as being remote farre from vs; like as the sunne also,
who is retired far South toward the Tropicke of Capricorne. Semblably, at the full in Sum-
mer, she is far off from vs, as being opposite vnto the sunne so neere vnto vs: no maruell there-
fore if shee be cold in regard of our climate: but in winter, at the same time of her opposition M
as she is nearer vnto vs, taking her course through the summer circle of the sun; so we may con-
clude, she doth moderate the rigour of winter cold, and consequently that then, ordinarily she
is warme. Considering then that the moone being (at the full in summer) so cold, and charged
ordinarily as shee is of her owne nature with much dew, what wonder is it if at such a time
the

A the frosts and dewes that fall be exceeding cold and congealed againe, which are the cause of
all the said blastings? But aboue all we must remember, that there be 2 sorts of accidents com-
ming from aboue, that mightily do wrong and annoy the fruits of the earth. The one wee call
tempests, which comprehend hails, storms of wind and rain, and such like impressions of the air,
which whensoeuer they do light, are termed by the Lawyers, *Vis maior*, *i.* the greater violence:
and these for the most part proceed from some of the horrible and dreadfull starres, as wee haue or the hand of
many times noted; to wit, Arcturus, Orion, and the Kids. Of the second sort of these calamities, God.
be they which happen when the weather is still and quiet without any trouble of windes, in the
faireſt and cleareſt nights, and no man euer perceiueth them vntill the harme be done: these bee
more publick and vniuersall, these differ much from the former; some cal them Mildews, others
B Hot-Planets; some again term them blasts and findging Carbuncles: but it skils not much what
names they haue, for all men confesse that scarcitie and dearth is their effect. And forasmuch as
no man hitherto hath written of these Blasts, &c. I mean to deliuer mine opinion of them, and
first to set downe the cause and reason thereof.

Chap. XXIX.

¶ *Of the Tempests and calamities incident to the fruits of the earth, as well in Winter as Summer: the meanes also to remedie such accidents causing sterilitie and scarcitie.*

C THese Blasts, these wicked Planets, that findge and burne the fruits of the earth, besides the
influence and power of the moone, proceed from other causes, and twaine especially, and
those are not to be found in many coasts and quarters of the heauen: for the star Vergiliæ,
regardeth principally the fruits of the earth, and ouer them is very predominant; as being the
only star, which in her rising and apparition begins Summer; in her fal and occultation, sheweth
the entrance of winter; by which means for six moneths space, whiles she is in sight, she compri-
seth harueſt and vintage, and generally causeth all fruits to ripen kindly or vnkindly.

There is besides in the heauen, a certain white circle called the milkway [or Watling street]
which is not imaginarie as others, but very conspicuous and easie to be seene. By the influence
of this circle, as it were out of some vdder, all plants receiue their milke, their humidity and nu-
D triment, and namely, by the means of two notable stars obserued therein; to wit, the Ægle in the
North-side thereof, and the Dog Canicula (whereof we made mention in place conuenient) scitu-
ate toward the South. This circle then passing through the signes of the Zodiacke, Sagitta-
rius and Gemini, and stretching by the centre of the Sun, cutteth the Equinoctial line twice in
two seuerall places: the commissures or ioints of which two signes, are possessed of the one side
with the Eagle star, and on the other side with the Dog Canicula beforesaid. No maruell ther-
fore if all countries habitable and fruitfull, be subiect to the influence of these two starres and
feele their effects; becaus in those parts only of the Zodiack wherein they are placed, the cen-
tre and middle of the earth, together with the centre also of the Sun, agree and meet just in one
and the same point of the Equinoctial. Hereupon it is, that if in the seueral seasons of these two
E stars aboue said (to wit, when the Egle and the Dog Canicula, doe either rise or fall, appeare or
couch) the aire be pure, cleare, and mild, and thereby the humour genitall distilling from that
Milkeway or circle aforesaid downe to the earth, meet with that faire and calme aire, then all
plants and fruits of the earth are the better for it, and prosper mightily. Now in case the moone
either at change or full, do send downe and sprinkle vpon them a cold congealed dew (in manner
aboue said) the humor and nouriture likewise descending from the Milk-circle, is infected ther-
with and becommeth bitter, killing all the fruit vpon which it falleth: much like as if a young
babe or infant new borne, should sucke bitter and vnwholsome milke, and thereupon soon after
die. Thus you see, how in euery climate what soeuer, the correspondence of the moone and the
starres aboue said more or lesse, causeth those vntoward Blasts, Mildewes, and such like; not in like
F measure at one time and in euery place. Which is the cause that this kind of iniury and calami-
tie is not felt at one instant throughout the world, no more than the day is one and the same
in all parts of the earth: for the Ægle (as I haue said before) ariseth to vs in Italy thirteen daies
before the Calends of Ianuarie, *i.* the 20 of December: now before that day be past (by the or-
dinarie course of Nature) there can be no assured hope of the fruits of the earth, but that they
may

may miscarry: but if it fall out besides, that the moon vpon that day do change, all fruits as well winter fruits as those which be called Hastie, must of necessity take harme and be hurt thereby. Rude and simple, I confesse, were our ancestors in old time, and altogether vnlettered, howbeit as wittie (as shall appeare) in their obseruations and ceremonies, as our Moderns in these daies be resolute, with all their skill they haue, grounded vpon reason and consequence: for according as they feared three seasons aboue the rest; lest they should do harm vnto the fruits of the earth; so they instituted as many Holy-daies and set feasts; to wit, Rubigalia, Floralia, and Vinalia. As touching Rubigalia, they were ordained first by King *Numa* in the eleuenth yeare of his raigne, which now we celebrate a * seuen-night before May-day, to wit, the 25 of April: the reason is, for that about this time corne is subiect to the blast. Howbeit, *Varro* following the order obserued in his daies, setteth downe this dangerous time to be, when the Sun is in the tenth degree of Taurus, and occasioned thereby. But indeed, according to the calcull of others, the true reason and cause is this, That about nineteen daies after the Spring Æquinox, diuers nations haue obserued foure malignant daies, which reach to the 28 of Aprill: in which time, the Dog-star Canis coucheth (a violent and dangerous star of himselfe by nature) and before which of necessitie the other little star Canicula must retire and goe downe. And therefore those ancestors and forefathers of ours, instituted the feast of Floralia, as they were aduised out of the bookes of *Sibylla*, in the 516 yeare after the foundation of Rome citie: who ordained also, that the said feast should be held the fourth day before the Calends of May; to wit, the 28 day before named of Aprill, for this intent, That all Plants might bloome kindly, and shed their blossoms as well. *Varro* setteth downe this day to fall out, when as the Sunne is entered foureteene degrees into Taurus. Therefore in case it be full moone during these foure daies of the Feast Floralia, not onely corne, but all other plants whatsoeuer that shall blossome, are sure to take great harme thereby. As for the former feast called Vinalia, which is kept fiue daies before; to wit, the * 23 of Aprill, it concerns nothing at al the fruits of the earth, but was appointed onely as a fit time for to tast wines. And yet for all these obseruations before-named, there is none of them pertinent either to Vines or Oliue-trees, for their time of conception beginneth at the rising of the star Vergiliæ; to wit, six daies before the Ides of May, which is the tenth of that moneth, as we haue before declared. About which time, there be other foure dangerous daies, in which husbandmen in no wise would haue any grosse and filthie stinking dewes to fall, for feare of their Vines and Oliues (for aboue all, they stand in dread of the starre Arcturus, which goeth downe the morrow after the rising of Virgiliæ, and commonly brings with it raw and vnkindly rimes) and much lesse that the moone should happen to be in the full at such a time: the fourth day before the Nones of Iune, which is the second of the same moneth, the Eagle starre appeareth the second time in the euening: a judiciall day is this day, and it will goe hard with oliues and Vines now in their flour, especially if the ful moon also light therupon, and giue euidence against them. For mine owne part, I would thinke verily, that the Summer Sunstead ordinarily vpon the 25 of Iune is as dangerous; as also the rising of the great Dog-star which alwaies falleth out to be 23 daies after the said sunstead, if so be that the moon doe change in any of those two daies; for then commeth the harm by extremity of heat, which doth so bake and harden the yong kernels of the grapes and Oliues new knit, that they be tanned as it were into a tough callosity, that they can thriue and grow no more from that day forward. Againe, the full of the moone is as hurtfull as it, to vines and Oliues, if it happen the fourth day before the Nones of Iuly; to wit, the fourth day of the said moneth, at what time the lesse Dog-starre Canicula riseth to them in Egypt; or at leastwise the sixteenth day before the Calends of August, which is the seuenteenth of Iuly, when we in Italy discouer the rising of the said Canicula. Likewise if the moone chance to be in the full betweene the twentie and three and twentieth daies of the said Iuly, what time the Eagle star goeth down, the same danger befalleth Vines and Oliues: as touching the second Feast Vinalia, which is obserued & kept thirteen daies before September, to wit, the 20 of August, it is not to be ranged among these, as being of another nature, and instituted at first for other causes: *Varro* would haue this feast to beginne at the departure of the Harpe-star Fidicula, which beginneth to retire in the morning, and which day he setteth downe for the first entry of Autumn: saying moreouer, that this feast was instituted for appeasing the stormes and tempests incident to that season. And now obserued it is, that the said Harp-starre Fidicula setteth six daies before the Ides of August, which is the 8 day of that moneth: Thus much

*S. Markes day with vs.

*S. Georges day with vs.

much as touching the causes of sterilitie and dearth, occasioned by the constellations according to sundrie seasons of the yeare, after that calculation which I goe by: But I will not bind euery man else to, for well I know and cannot denie, but the readers may change and alter the same at their pleasures, according to the diuersitie of the climats, in regard whereof, the obseruation also of those dangerous daies may vary from mine account. For this present, it sufficeth my turne that I haue set down the true cause in Nature, from whence proceed those calamities: all the rest besides, I refer to each mans consideration, who for any thing that I haue said, may take their libertie and obserue what they thinke good. Certes this shall be found cleare and doubtlesse in the end, That these vnkind dews and daungerous blasts are occasioned by one of these 2 causes, to wit, either the full or chaunge of the Moone. And herein verily, I cannot chuse but meditate vpon and admire the wonderful goodnes and bounty of dame Nature, first in this That she hath so limited and determined the set course of the stars, that these calamities cannot possibly happen euery yere, neither yet oftentimes in the same yere, but only some few nights, to wit, in the chaunge or full of the Moone: and when they will come, it is easy to foreknow and fore-tell. And to the end that we should not need to feare those daungers euery moneth, shee hath so ordered the matter, and diuided the influence of the Moone by night in such sort, that setting aside two daies in Summer, the chaunges of the Moone do no harm at all: no more than the full in Winter: neither are these two new Moones to be feared, but in Summer nights, and those shortest of all other: wherby they haue lesse time and leasure to offend the earth: for al the day long they haue not the same force, nor worke the like effects. Ouer and besides, to ease a matter she would haue it for to know either the conjunction or opposition of the Moone, that the very Pismire (the silliest and least creature of all other) by instinct of Nature, is our guid to the one and the other: for in the change she is seen commonly to rest and take her repose; whereas at the full Moone she works and labours both night and day. And that we should not be ignorant of the Dogge-star Sirius his rising, looke what day he sheweth first, the little Nonett or bird, called in Latine Parra, goeth aside, and appeareth not again before he be hidden and gone downe. Contrariwise, the Loriot, Greene-finch, or Canarie bird Vireo, commeth abroad the very day of the Summers Sunstead, and not before, that we should not pretend ignorance of the longest day in the yere, a time wheron dependeth so great a consequence. But be it change or be it full, neither the one nor the other habit of the Moone is daungerous, no not in the very night season, vnlesse it be cleare and calme: that is to say, faire starlight, and all winds laid: for neither in cloudy and close weather, ne yet when the winds are aloft, doe any dewes fall. And at such times also as they vse to come, there is a remedie prouided against them: for when thou fearest a blast or Mielde aw, lay me altogether ouer the fields and Vineyards (by heaps) Vine-cuttings and such drie sticks, chaffe, straw, and other like mullock, drie weeds and shrubs which haue been plucked out of the ground, and set them all on fire; the very smoake will helpe this matter, and auert the daunger from corne and grapes. And as for the fume of chaffe and straw, it is good against stinking fogs and mists, when they are thought to doe harme. Some there be that prescribe to take three Crab-fishes aliue, and to burn them in hortyards among the trees: to preserue and defend them against the sindging blast called the Carbuncle. Others take the flesh of the fish Silurus, & rost or broile it softly vpon the fire, on the wind side, to the end, that the fume and smoke thereof might be caried and dispersed al ouer the Vineyard, to chase away scorching blast aforesaid. *Varro* affirmeth, That if about the retrait of the Harpe-star Fidicula, which is the beginning of Autumne, a man paint a cluster of grapes, and consecrate it to the gods among the Vines, the stormes and tempests of wind and raine will doe lesse harme to the fruit hanging thereupon. *Archibius* in a book that he wrote to king *Antiochus*, saith, That if a land-toad be put into a new earthen pot that neuer was occupied before, and the same entered and couered within the ground in the middest of a corn field, the corne shall take no harm that yeare by any tempests whatsoeuer.

As touching the rustical work which should be don in these six weeks space, the Husbandman ought to giue his lands a second fallow, to dig about the roots of trees, & (where the heat of the countrey doth so require) to mould and banke them again: howbeit, such as be budding and putting forth new shoots, would not be digged, vnlesse the soile be very good and rank. Seminaries or nource-gardens would now be sarcled & cleansed. Addresse himselfe he must, and make all ready against Barley hareuest. Now is he to prepare his barn plot and thrashing floore,

and to paue it with a coat of chalk, tempered wel & wrought with oile dregs, by *Catoes* aduise; how soeuer *Virgil* is more curious in this behalfe. For the most part of Husbandmen, after they haue laid it euen and leuell, they go ouer it again with Oxe dung, tempered to a thin consistence with water, for to bind the said floore: and this is thought to be a sufficient remedy, that the dust shall not rise. G

CHAP. XXX.

¶ *Of Corne harueſt: of common Wheat: of Chaffe: and the order how to keepe corne.*

AS touching the manner of cutting downe or reaping corne, there be diuers and sundry deuises. In France where the fields be large, they vse to set a iade or an asse vnto the taile of a mightie great wheele barrow or cart made in manner of a Van, and the same set with keen and trenchant teeth sticking out on both sides: now is this carre driuen forward before the said beast vpon two wheeles, into the standing ripe corne (contrary to the manner of other carts that are drawne after) the said teeth or sharp tines fastened to the sides of the wheele barrow or car aforesaid, catch hold of the corn eares, and cut them off: yet so, as they fall presently into the body of the wheele-barrow. In some places the fashion is to cut with a hooke or syecle the straw in the middest: and betweene euery two sheaues they sit down, and then crop off the eares iust at the straw. In other countries they vse to plucke vp the standing corne by the root: and in so doing, perſuaded they are that this is a very neer and ready way to saue charges, & may serue for one tilth well enough: but by their leaue, they rob the ground by the means of her kinde and naturall moisture. The reason of this diuersitie is this: in such countries where they vse to thatch their houses with straw, they saue it to the full length, and go as neare as possibly they can: againe, where there is but small store of hay, they make account of their short chaffe for to litter, yea, and fodder their beasts. As for Panicke haulme, it neuer serueth the turne in any place for thatch. And for Millet straw, they burne it ordinarily. Barly straw is kept and saued very carefully for an excellent fodder, that kine and oxen loue very wel. To conclude, in France they haue another way to gather their Panicke and Millet especially; to wit, cutting the same eare by eare vpon a combe with a handle to it [as Barbers vse to clip or poll mens heads.] H I

Concerning the deuise of thrashing, it is practised sundry waies. In some places they vse to cruſh the corne out of the eares with heauie and rugged dreies drawne ouer it, as it lieth vpon the barn floore. In others, they set mares to stampe and trample it vnder their feet, and so driue it out: and there be againe who beat and flap it forth with flailes or cudgels. K

Common wheat, the later that it is reaped, the better it is found of cast: but the sooner that it goeth downe, the fairer is the graine, and more full and weighty. The best rule for the one and the other, is this; to goe downe with it, and lay it along, before the corne be very hard, and when it beginnes once to looke russet, and to haue a browne or reddish blee. And here, remember the old said Saw that may goe well for an Oracle, Better two dayes too soone, than as many too late. L

For the inning of the fine wheat Siligo, and the common Triticum, it is much after one sort, and they would be ordered alike, both in barne, rike, and thrashing floore. The good red bearded wheat Far, because it commeth hardly out of the huske, and asketh some painefull thrashing, ought to be laid vp in the garner, huske, and all together, euen in the chaffe; only it would be rid from the main straw, and despoiled of the eiles or beard growing to the eare. Chaffe is good chaffre in many countries, and serues in stead of hay. Where note, that the finer and smaller that the chaffe is, and inclining nearer to pouder, the better it is thought to be. And therefore the best simply is that which commeth of Millet: the next in goodnesse, Barley maketh: but the common wheat Triticum yeeldeth the worst; vnlesse it be for poore hungry iades and such laboring garrons. M

The straw or haulm that remaineth standing as boltings when corne is reaped by the eare or after it be well dried, the manner is to lay vpon some hard, craggie, and stonie ground, then all to beat and belabor it with cudgels, that it may be soft and serue in stead of litter to lie vnder cattell. If chaffe faile for fodder, the very haulme or straw left in the field, ought to be braied and beaten short, to supplie forrage in manner following. Cut it downe so much the sooner, let it be well

A well sprinkled and drenched a long time in brine: and when it is dried againe, make it vp round into certaine bottels or bals, and so giue it to kine and oxen for their fodder. There be that set fire on it, and straw both, in the field whereas it grew. And surely, *Virgil* highly commendeth this for a great point of Husbandry: the chiefe reason herof was, to burn the seed that the weeds shed, and to kill their roots that remaine vpon arable ground. In sum, the diuers fashions and manners of reaping, proceed from this, That in some countries the harueſts be gteater than in others: and besides, Reapers and Mowiers are not to bee had in all places alike, nor so easily hired.

It followeth now by good order, as a matter hereunto annexed, to write of the manner how to lay vp and keep corne for store. Some are very curious and indeed ouer precise in this point, and
B namely in building of barnes and garners. For they giue order, that in any wise their walls bee raiſed of bricke, and those three foot in thickenesse. Also, that they be filled top full and closed, vp aloft, that they haue no windows at all, nor any place open to let in or admit wind. Others would haue windowes, but those onely toward the Northeast winde, where the Sunne riseth in Summer, or else into the North: and in any hand the bricke must not be laid with lime, for that it is most hurtfull to corne. For as touching oile dregs or lees, how they would haue it to be vsed, I haue declared already. Contrariwise, in some countries they build their garners of timber and set them aloft in the aire hollow from the ground, bearing vpon piles and posts of wood: & such are deuiſed of purpose with many ouertures on euery side to receiue wind, insomuch, as from beneath also the bourds and plankes be open to take all aire. And yet others there be who
C misſlike altogether these kinde of frames, beeing of this opinion, That in such solars and lofts reared so high into the aire, the corne will diminith and wither: yea, and if it lie neare to a roofe of tiles, it will be in danger to catch a fire and burne. There bee that would not haue corne to be turned in the garner, for to breath and take the winde: for that the mite or Weevill that eateth graine, neuer commeth within foure fingers of the bottome of the heap, so that beneath that gage there is no danger, and therefore it needs no such stirring at all. *Columella* saith, That it were good to haue a garner open into the West, for that the winde Fauonius is kinde for corn: whereat I maruell very much, considering that otherwise hee is carefull to seeke out the drieſt places. Last of all, there be some that would haue a land-toad tied by one of her hinder or longer legges, and so to hang at the dore and entrie of the garner or barne where corne lieth. For
D mine owne part, if I should speake what I thinke, I hold, that the chiefe and principall thing for the keeping of corne well, is to know and vse the very fit time and season of laying it vp. For if it bee gathered when it is not fully ripe, and before it haue the due parching from the Sunne, and the firme substance hardened as it ought, likewise if it bee brought vnto the barne or garner hote, it cannot bee auoided, but Vermine will breed therein to doe it much harme.

That some kinde of graine will continue good and sound, yea, and last longer than other, there be many causes. For either it proceedeth from the skinne or huske, when it is manifold, as in Millet; or the fatnesse of the marrow and flour within, which maintaineth and feedeth the graine as the radicall and nutritiue humour, as in Sesama; or lastly, of bitternesse, as in Lupines
E and the small bitter Cichets. As for the Frument or wheat Triticum, apt it is most of all other to ingender and breed weeuils and such like wormes, because it soone catcheth a heat, and is quickly enchaufed, by reason of the thicke and fast substance of the owne, and besides inclosed and clad it is within a thicke and grosse skin, which is the bran. Barly hath a finer and slenderer husk: and some Pulse a thinner than it: such therefore are not subiect to the said vermin: howbeit, Beanes be couered with thicke pillings or tunicles, and therefore easie to take an vnnaturall heat and putrifie. Some vse a deuise to keepe Frument corne a long time, with oile lees, bestowing onely the sprinckle of one Quadrantall, to a thousand Modij thereof. Others bestrew amongst it the powder of Chalke brought either from Chalcis or Caria; or else lay some Worme-wood among it. There is a kind of earth in Olynthus and Cerynthus within Euboea, which is highly commended in this case, for it will not suffer corne to corrupt. And lightly,
F what corne soeuer it be that is laid vp in the eare, neuer taketh any harme, keep it as long as you will. Howbeit, the best and most assured way to preserue corne, is in caues or vaults vnder the ground, which in Latine be called Siri, as the practise is in Cappadocia and Thracia. In Egypt and Barbarie, aboue all things they looke to this, That their garners stand vpon a drie ground:

and how drie soeuer the floore be, yet they lay a course of chaffe vnderneath between it and the corne. Moreouer, they put vp their corne in garners and bins, together with their spike or eare; by which deuise they are sure (if no aire come in) that no hurtfull worme or vermine will breed among it. And verily *Varro* saith for certaine, That wheat in that manner laid vp, will last fiftie yeres, and Millet an hundred. He affirmeth moreouer, that beans and other pulse wil keep good a long time in oile barrels, if they be calked with ashes. Hee auoucheth moreouer, that beanes were knowne to haue continued from the time wherein king *Pyrrhus* liued, vnto the Pyrats war, which vnder the conduct of *Pompey* the Great was dispatched & brought to an end; which prouision of beans had beene laied vp 120 yeares before, and kept close in a certaine caue vnder the ground, within the citie of Ambracia. The Cich pease is the onely graine that is subiect to no vermine breeding in it while it lieth in garner or barne. Some there are who take certaine pitchers of earth hauing vineger in them, vpon which beeing well bedded in ashes and done ouer with pitch, they make their heapes of Pulse, and by this meanes they are verily perswaded, that no Meuils, mites, and other wormes will breed therein to doe harme. Others, for to preserue their pulse, put them into salt-fish barrels, but they dawbe the same first with a certaine kind of mortar made of plaster. Last of all, for to keepe Lentils, there be that drench them with the vineger confected with Laserpitium, and when they be dried againe besmeare them ouer with oile. But will you haue indeed one short rule for all? To be sure that no worme or vermine shall breed in your corne, cut it downe and gather it about the change of the moon. Therefore it skilleth very much to know a mans intention, whether he mean to keep or to sell his corne: for certain it is, that as the moone groweth, so doth corne wax full and great, and therefore filleth the strike a great deale better.

G H I

Chap. XXXI.

¶ *Of Vintage: and the particular seasons in Autumne.*

According to our partition of the yere into foure quarters, it followeth now by course and order, to treat of the Autumne, which beginneth at the retreat or occultation of the Harp star Fidicula; and so forward to the Equinox in September: from whence I will proceed to the couching or going down of the Brood-hen Vergiliæ, the very beginning & first entrance of the winter. In which mean spaces and equall distances, both before & after the said Equinox, these stars following are significant, and set out the particular seasons: first, the day before the Ides of August, (*i.* the twelfth of the moneth) the star called the Horse, appeareth in the Hæmisphære to the people of Attica: but at euen-tide the same day, the Dolphin star setteth vnto them in Egypt, and likewise to vs here in Italy, according to *Cæsars* account. Also eleuen daies before the Calends of September, which is the 22 day of August (by the calculation of *Cæsar* and the Chaldæans) the star named in Latine *Vindemiator, *i.* the Vintager, beginneth to shew in the morning, both to the Assyrians and the Italians; a trustie vaunt-curriour, bringing certain tidings with him, and promising assured hope of a vintage, & that the grapes will be ripe anon: and for a farther token and appearance thereof, marke the grapes then, for now beginne they to change colour. To the people of Assyria, the fist day before the Calends of September, *id est*, the 28 of August, both the star Sagitta seemeth to go downe, and withall the Etesian winds lie, and giue ouer blowing. The Vintager himselfe, to wit, the starre so called, to the inhabitants of Egypt riseth vpon the Nones of September, *i.* the fifth day of the moneth: vpon which day to the people of Attica, the star Arcturus riseth in the morning; and the Sagitta, *i.* the Shaft, goeth downe in the euening. To come now to the Ides of September: fiue daies before them, that is to say, the ninth day of the moneth (after *Cæsars* card) the star called Capella, *i.* the Kid, sheweth it selfe here in Italy toward euening: but the day before the said Ides, *i.* the twelfth day of the moneth, the one halfe of Arcturus appeareth to rise: and then for fiue daies together (his influence is such) hee keepeth such foule work both by sea and land, that both Sailer and Husbandman feele the violence of his arriuall: and this reason is giuen therof; for if (say they) at the fall or occultation of the Dolphin star, there be no showers of raine, none will Arcturus bring with him at his comming. An euident signe there is, that the starre Arcturus will not be long before he arise, and that is this, The departure of the Swallowes; for this is certain, if he chance to surprise any of them, and that they be not gone before out of the countrey, they are sure to pay for their

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*Vindemiator, the forerunner of the Vintage, commeth for Vindemiator followeth afterward in September.

A their long tarrying and to die for it. The 16 day before the calends of October, which is the sixteenth day of September, the star called Spica, *i.* the eare of corne, which the signe Virgo (*i.* the Virgin) holdeth in her hand, riseth in the morning to them in Egypt; & then the Etesian winds also are quiet & laid in that country. How beit after *Cæsars* calculation, this falleth out vpon the fourteenth day before the Calends of October, *i.* the 18 of September, to vs in Italy: and by the account of the Chaldæans, a day after to them that dwell in Assyria. Moreouer, the 21 of September (after the supputation of *Cæsar*) the Knot of the two fishes, a signe or star so called, goeth downe to our sight in Italy; like as the very Equinoctiall starre it selfe three daies after. After which time, *Philippus*, *Calippus*, *Dositheus*, *Parmeniscus*, *Conon*, *Criton*, *Democritus*, *Eudoxus*, and *Ion*, agree all in this (and that is maruell to see so many Astrologers to accord) That foure daies be-

B fore the Calends of October, the star Capella, *i.* the Kid, riseth in the morning: and the morrow after, the [two] Kids doe the like. The sixth day before the Nones of October, which is the second day of the moneth, in Attica and the regions adioining, the star named the Crowne appeareth betimes in the morning: but in Asia, and to vs Italians (after the reckoning of *Cæsar*) the next day following, the star Heniochus goeth downe in the morning. Two daies after that, to wit, the fift of October (according to *Cæsars* computation) the star named Corona, *i.* the Crowne, beginneth to shine in Italy: the next day after, the stars called the Kids, lose their light in the euening: The eighth day of October, which is eight daies before the Ides thereof, the shining star within the foresaid Corona, sheweth it selfe in Italy by *Cæsars* booke: but the thirteenth day of the same moneth, the star Virgiliæ, *i.* the Brood-hen, sheweth in the euening: and vpon the

C very Ides, which is the 15 day of the moneth, the Crowne star aforesaid appeareth full & whole. Now six daies before the Calends of Nouember, *i.* the 27 of October, the stars called Suculæ, or the rainie Hyades, begin to shew in the euening: and the last day of October, which is the Euen of the Calends of Nouember (if *Cæsar* say true) Arcturus setteth in Italy, and the said Suculæ, or the rainie Hyades rise the same day together with the Sunne. Foure daies before the Nones of Nouember, *i.* the second day of the moneth, Arcturus goeth downe in the euening: like as the fift day before the Ides, *i.* the ninth day of Nouember, the star named Orions sword beginneth to retire: and likewise two daies after, the Brood-hen Virgiliæ is hidden and appeareth no more.

As touching now the country worke that Husbandmen are to employ themselues about du-

D ring this space of time or halfe quarter thus described, they ought if they did well, to sow Nauewes, Turneps, and Radishes, vpon those daies that I haue appointed heretofore: and let them neuer goe by the voice of the rurall fort, who thinke it not good to sow so much as Rapes, after the departure of the Storke: for bold may we be here in Italy, euen after the feast Vulcanalia to put them into the ground; as also our early white corne, together with Panicke. But after the going down of the Harp-star, good I hold it to sow Vetches, Phaseols, or Kidney-beans; as also the dradge or bollemong for horses, called Pabulum, *i.* Forage: howbeit, folke say, that this forage would not be sowne but about the new moone. This is the time also to strip greene leaues, and slip tendrons from trees, thereof to make fodder for beasts in winter: and one good daies worke it is for a man to fill foure hampers made of purpose for such brouse. Now if these leaues

E be gathered and prepared before-hand when the moone is in the wane, they will neuer corrupt and putrifie. Greene must this brouse be in any wise when it is gathered, and not feere or withered.

To come now vnto Vintage: men thought in old time that it was not ready nor the grapes ripe enough, before the Equinox in September: but now adaies I see how they goe to worke euery where sooner, and fall hastily to gather grapes halfe ripe. Therefore it were not amisse to set downe certaine markes and signes to direct the husbandman for this season. The rules therfore to guid him, be these: gather no grapes hot, that is to say, when they be dry, nor vnlesse a good shower of raine come betweene: yet take heed you must, that you pluck them not full of dew, namely while the dew that fell ouer-night, doth stand vpon them; nor before the Sun hath

F drunke vp the said moisture, and dried them. Set into thy vintage hardly and fall to gathering, when either the vine leaues or greene branches called the Porroirs, doe fall and rest vpon the old wood: or when, after you haue taken one grape from the rest of his fellows standing thicke together in the cluster, you see the void place not to fill vp again, whereby it appeareth that the grapes and kernels about it, grow no more. Very good it is for grapes, if they be gathered when

the moone is croissant, to wit, before the full. At one pressing ordinarily, there should be filled twentie measures called Culei; Cowles now is this measure for liquours the greatest of all others, and by which the rest ought to be proportioned justly. For to presse thus many vessels at once, and to serue twenty acres of vineyard, one wine-presse is sufficient; and likewise to hold the same, one vessell or keelvat. Some vse but one plank or stocke to presse withall; but better it is to haue them double: although those that be single be exceeding huge. As touching these pressing planks, it is not so much their thicknesse and massiue substance that is to be regarded, as their length; for indeed the longer and larger they bee, the better they doe their deed. In old time they vsed Ropes, leather thongs, and leauers, and by force of them pulled downe and forced hard the presse-Planks. Within this hundred yeres were the frames deuised which we cal Græcanica, wherein the maine plánke or vpper stocke of the presse, went with a vice in manner of a skrew, for the wrinckles of the spindle were fitted and serued in an engine or windlace in maner and forme of a star, set fast to the worm or vice of the spindle aforesaid, and which as it was turned and wrested, lifted vp or let downe the presse-planke or lid, together with the weights of stones thereupon: and verily this fashion of presses was held to be best and most approoued: how beit, it is not 22 yeares since there came vp another deuise and inuention to make small presse-planks, lesse winding pieces also, and the whole frame shorter: howbeit in the middest thereof stood vp the spindle of the said skrew or vice. Now when they purposed to squeize out the grapes, they laid certain lids or planks theruppon called Tympana, and those they forced with a wrest from aloft, vsing also the poise and weight of such matters as they heaped vpon the planks aforesaid.

Moreouer, the custome is to gather apples and such like soft fruit, about this time, with this obseruation or direction; namely, To go in hand with this businesse when any are seen to fal of themselues, as mellow and ripe, and not blowne downe by force of wind and tempest: now is the season also to presse out the lees or sediment of the grapes: now the time serueth to set the new wine to the halfe, and make cuit thereof, with this regard and consideration, that if the moon be vpon the change, this be done by night, but if in the ful, by day-light. As for other daies, it mattersnot much, so that the cuit be boiled either before the moone rise, or after she be gon down. Moreouer, heed is to be taken, that the grapes of yong vines or such as grow vpon low and marish grounds be not vsed hereabout; and much lesse those that be not fully ripe. In the scumming also and clarifying of the liquor while it boileth, no other thing but leaues are meet for that purpose: for if any wood come neare & touch the vessell or lead wherein the liquor is sodden, it is thought that the cuit will be smokie and smell of the fire. Furthermore, the ordinarie time of vintage holdeth forty foure daies, to wit, from the Equinoctiall in September, vnto the going downe or occultation of the Brood-hen Vergiliæ: after which time, remember the oracle and common prouerbe, That wine vessels are not to be rosined, calked, and trimmed in cold; for good husbands would do this before-hand in hot weather. Howbeit in these daies I haue seene those that for want of vessels haue gone in hand to tun vp their wine in the beginning of *Ianuarie: yea I haue knowne when the vintage hath beene so great, that wines newly pressed haue bin kept in fish cesterns: and for default of other pipes & tuns, when the wine-cellars haue bin full already, I haue seen them that would let the old run out into such cesterns, for to make roome for the new, and such as a man would say were neither made nor vnmade. And yet this is not so often practised by occasion of the exceeding store of new wine that lieth on mens hands, as of a wicked and couetous mind that some carry to gather a deale together for to set vp a Monopolie, thinking thereby to make a dearth and to raise the price of their wines, to the great detriment and hinderance of a common-weale. But a good and honest minded householder wil rest contented to furnish himselfe with a competent prouision of wine, and lay vp no more than hee shall spend euery yeare: and this is found also by experience the most profitable way for his purse. As for all other matters concerning wine, because I haue already spoken at large thereof, I will here lay a straw and make an end. But this would not be forgotten, that so soon as grapes be gathered, men must high them apace and make haste to get in their Oliues: for presently after vintage and wine-pressing, they must thinke of drawing their oile, and employ themselues in other works of this season, which are to be done a little before and after the retreat of the Brood-hen Star Virgiliæ.

CHAP.

culeus containeth 20 Amphores, which is 320 *congij* or gallons.

*Some reade Nouember.

CHAP. XXXII.

¶ *The consideration of the Moone and her course, respective vnto Husbandrie.*

HEreunto shall be annexed a discourse as touching the Moon and the Winds, together with the Prognostication depending thereupon, as much as may be thought necessarie and pertinent to Agriculture; to the end, that our rusticke Astrology may in all points be accomplished and perfect. For *Virgil* also was of this opinion, That some businesse and workes of Husbandrie were to be digested and diuided according to the daies of euery Moone in order as they goe, following herein the vanity and ostentation of *Democritus*. For mine owne part as I haue hitherto in all my work throughout rested vpon the good & profitable rules of our ancestors, so in this point also I meane to take their direction, and goe by no other. According to their ordinances and precepts therefore, this first is to be obserued, That whatsoeuer is to be cut, gathered, or laid vp, be it wood, fruict, or grain, it ought to be done rather in the wane of the Moone, than whiles she is croisant toward the ful, & lesse danger is it subject vnto. *Item*, Touch no mucke, nor lay it vpon thy lands but after the full, when shee is in the wane. *Item*, Dung thy ground, whiles the Moon is in conjunction with the Sun, and in the first or last quarter. Gueld Bores and Steeres, lib Rams and Kids or yong Goats in the old moon. *Item*, Set Hens to couve egs in the new of the moon. Make thy trenches by night in the ful Moone. Likewise, couer the roots of trees with mould when the Moone is at the full. *Item*, In moist grounds sow and set either in the very chaunge, or 4 daies before and after. As for the winnowing, vanning, and laying vp either of corne or pulse, they would haue it done in the old Moon, about the last quarter. As also, That Pepiniers, Seminaries, or Nource-gardens, be made when the Moone appears aboue the earth. But grapes ought to be troden & new wine pressed, whiles she is vnder our horizon. Likewise, timber is to be hewed, and many things else to be don accordingly, whereof we haue written alreadie in their seuerall places. And albeit the obseruation of the Moone, her age and change is easie ynough, and nothing more familiar: whereof also I haue written sufficiently in the second volume of this worke: yet further to instruct the simple countreyman who knoweth neuer a letter of his book, and to set before his eies the true order and course of her motion and mutation, let him but obserue and marke thus much, That so often as she is seen Westward after the Sunne is gone downe, and shineth the forepart of the night onely, she is croisant, and in her first quarter, and then shall a man discerne euidently by the eie the one halfe of her bodie light: but looke when, as the Sun setteth in the West, she riseth at the same instant ouer against him in the East, so as they may be both seene at once, but sure she is in the full. Againe whensoeuer she riseth late in the West, and shineth not in the fore-part of the night, but toward the morning, make account she is in the wane, and sheweth but her halfe part againe. But so long as she appeareth not at all, and giueth no light, assure your selfe she is in the conjunction with the Sunne all that while and this in Latine is called Interlunium, (*i.* the change.) Now at the very instant of her conjunction or change, and the first day, vntill she be one day old, she will remaine aboue the earth so long as the Sunne is there also with her: the second day she will be in our hemisphære by night, tenne * twelue parts of an houre, and a quarter of one twelfth part. Thus in proportion will she rise vpon the fifteenth day after her change, multiplying euery day the said portion of the houres. When this fifteenth day is come, she wil be all the night whole aboue the earth, and all day long vnder. Vpon the sixteenth day of her age she will remaine beneath our Hemisphære, after the first day, ten parts of twelue, and one quarter of a twelfth part within night, before she rise and shew her selfe, and so will she keepe daily the foresaid proportion just, in later rising: diminishing still her light by the same degrees, vntill the chaunge. And looke how much she staieth in the beginning of the night vnder the earth ere shee appeare in our Horizon, so long in the next morning wil it be after day-light ere she go downe. Finally, euery second moneth the Moone hath thirtie daies full out, like as each other moneth betweene shee wanteth one of that number, and hath but nine and twentie. Thus much concerning the course of the Moone in regard of Husbandrie.

*51 minutes & ½

CHAP.

Chap. XXXIII.

¶ The consideration of the Winds, respective to Agriculture.

AS touching the winds, the reason and quartering of them is more intricate, fuller also of scrupulous doubts and difficulties, than was the obseruation of the Moon: notwithstanding that, there is not a day in the yeare goes ouer our head, but we may easily find & mark both South and North. For if a man doe obserue the Sunne rising any day whensoeuer he will, and vpon the sixt hour of the same day (to wit at noon) stand so as he haue his left shoulder directly turned against the said Sunne rising, he may be assured, that he hath the South fall vpon his face, or before him, and the North behind his back. Now the line or streight way that runneth in this manner through a field North and South, is called in Latin * Cardo. When a man standeth thus, if he would see his owne shadow, he shall do well to turn his bodie round about: for otherwise it will be behind him. Chaunging sides therefore, so as he haue the Sunrising or Leuant of that day iust against his right shoulder, and the setting vpon his left, he may know midday or South point as wel as before, namely, when his body casts just before him the shortest shaddow, enclining to the one hand no more than to the other. Let there be then either a small furrow rased along just through the mids of the shadow with a spittle spade, or the point of some hooke, or else a line drawne with a train of ashes, for the length of some twentie foot or thereabout (to make the thing more plaine.) Which done, cut the said line or furrow crosse ouerthwart the middle, to wit, at the tenth foot, if the whole be twentie, and then make a round small circle about it, which may serue in stead of a Nauil, and be so called. That part of the line then which goeth directly forward from the crowne of the head in the foresaid shadow, points out the North wind. Thou therfore that art to lop ot prune trees, rake heed thou makest not thy cuts so, as they look into that coast: neither let thine hortyards or vineyards stand open to that wind, vnlesse it be in Affricke, Cyrene, and Ægypt. Againe, so long as the wind sits in that corner beware Ploughman [for now I speake to thee] thou breake vp or eare no ground, nor enter into any such worke in the field as thou art alreadie forbidden by mee to doe. But marke what part of the line shal come from the foresaid circle straight before thy feet regarding the noone-tide or mid-day, assure thy selfe the same telleth thee which is the South wind, called by the Greeks Notus, as we haue declared already. Doth the wind rise and blow from that side? meddle not Husbandman during that time with thy vine. Carpenter, fell no trees then for timber I aduise thee. A wet wind this is and hot, within the climat of Italy. In Affrick verily dry ynough it is, and bringeth faire weather with it, but with al his faire looks, he kindleth fire otherwhiles, and burneth many things. Let hardly the Vine spread her branches, and run into this wind, in al places of Italie: but leaue not the cuts of tree or vine looking that way. He that sets out a plot of ground for Oliues, and planteth them, hath cause to be afraid of this wind, especially for four daies together, about the rising or apparition of the star Vergiliæ or Brood-hen. They also that graffe sions in the stocke by cleft, or set bud in the scutcheon by way of inoculation, must take heed how they meddle in this wind.

Moreouer, it will not be amisse to giue some caueat as touching the very houre of the noone-day, which giues vs knowledge of this wind and this quarter; namely, what is to be don at such a time, and what not? Thou woodman and forrager both, see thou neither cut nor lop trees, see thou gather no greene leaues and tendrils for thy fodder at noon-tide: Thou sheepeheard, thou heardman whatsoeuer, when thou perceiuest in Summer time by the shaddow growing short, that noonestead is at hand, driue thy sheep and cattell out of the Sunne, into some worm-stall and place of shade. More yet I haue to say to thee, If thou keepe sheepe or other beasts at their pasture in Summer time, lead them or driue them before thee al the morning into the west before mid-day: but after noon turne thy face Eastward with thy flock and thy heard. Otherwise, and at other seasons, as namely, all Winter and in the Spring, thou shouldest doe thy cattaile hurt, to conduct or lead them after this manner out of the warme Sunne into moist places, and where the deaw falls. As charie also and heedfull must thou be to driue thy cattell Northward from the Sunne, and there to let them graze: for marke what I say, in so doing, they will not be able to hold open their eies; this wind wil make them bleared & bloudshotten; nay, it wil driue them into a gurry or flux of the belly, which will soone make an end of them. Howbeit, if thou wouldest

* *Plinius & citratus veteribus.*

wouldest haue the beasts conceiue and bring forth femals, force them when they be leaped and couered to stand with their heads in this wind, and thou shalt see the proofe hereof.

Chap. XXXIV.

¶ Of the lines and limits that diuide and bound fields.

WEe haue shewed in the next Chapter before, the manner how to draw a line or furrow North and South, and how in the middest thereof there should be a round compasse made manner of a Nauill, which in Latine is called Vmbilicus. Now if you would know likewise the other parts of the heauen, let there run such another line ouerthwart the Nauill or circle iust in the midst: and then shalt thou see, that this line will direct thee to the East & West points, Æquinoctial. [Now the way that thus cutteth through any field East & West ought to be called Decumanus in Latine, or the Broad way.] Which done, draw other 2 lines through the centre of the foresaid circle, cutting one another aslant [like S. *Andrewes* crosse] or the letter X, so as that line which at one end points to the right hand of the North, reach to the left hand of the South at the other. Likewise that which regards the left side of the North at the one end, run directly to the right hand of the South with the other. All these lines must be of an euen length, of equall distance one from another, and passe through the same Circle, which we call the Nauil. Hauing thus made the 4 crosse paths or waies in euery field once for all, thou maist euer after know how the winds do stand. But if thou list to haue such a deuise to serue thy vse many times after, make a little instrument of wood, but the same as round as can be by the compasse, and therein draw or print 4 lines of an euen length and equal distance, passing as diameters al through the centre, to the circumference of the rundle: and this may serue thee in stead of a quadrant, where & whensoeuer thou needest. The maner how to make and vse this instrument I am content thus to shew, because I haue to deale with simple ignorant men of dull wit and shallow conceit, who may soon erre and doe amisse. Let vs see then first for the meridian line and the South point of the noon day, for to be perfect therein, because it is euer the same, and changeth not from one end of the yeare to another, whereas the Leuant varieth euery day, for that the Sun neuer riseth the morrow morning, from the same point iust that he rose the day before: which I note, lest haply any man should take one certain line for to point out the Sun-rising or the East, and make his quadrant or compasse thereby. Now when thou hast in this wise exactly set out the principall regions or quarters of the heauen, obserue this, that the end or head of the line which is next to the North point Septentrio: on the East the same sheweth the very place where the Sun riseth at the summer Sunstead, to wit, the longest day of the yere; and the wind there seated is called in Latine Aquilo, *i.* the North-east winde, and in Greek Boreas. Thou knowing this perfectly, set thy trees and plant thy vines full vpon it. But so long as this wind bloweth, plow no lands, set no trees or plants that are to beare fruit, cast no grain nor seed into the ground. For why? this wind pierceth, pincheth, and killeth the heart of any tree root aboue ground, that thou shalt bring to replant. Take warning therefore beforehand, and be aduised: for experience hath taught, that one thing is good for strong and sturdy trees, and another for yong and tender plants. Neither am I ignorant or forgetfull, that the Greekes haue placed in this corner the winds which they name Cæcias: but *Aristotle* himselfe, a Philosopher of an infinite spirit and high conceit (the man that hath so done) sheweth a reason drawn from the conuexitie or bending cope of the heauen, wherby the Northeast wind or Aquilo bloweth ful opposit to the Southwest Africus. Howbeit the husbandman is not afraid of this Northeast wind Aquilo all the yeare long, in those particularities whereof hee is forewarned. For in the midst of summer this wind doth moderat and temper the ardent heat of the stars raigning and raging in that time: then changeth hee his name, and [during the Dog-daies] is called Etesias. When thou therefore feeleth him blow cold, take heed and be not too bold. But learn this withall, that howsoeuer this wind may do harm, in some respect, for which thou art forewarned; yet the wind Septentrio that bloweth plumbe North is far more dangerous and mischieuous than he. Against the Northeast wind aforesaid, let both hort-yards, tree-rowes, groues and vineyards be ranged; in all Natolia, Greece, Spain, Maritine coasts of Italy, Campaine, and Apulia. If thou desirest to breed males keepe thy cattell with their heads into this wind, and in that sort let thefem ales be couered.

* *Dextratus & Sinistratus Antiquis.*

When thou haſt found out in this maner the North-eaſt wind Aquilo, be ſure that the wind G
which bloweth ſul againſt it from the point where the Sun ſetteth in midwinter when daies be
ſhorteſt, is the Southweſt, called in Latin, Africus; and in Greek, Lybs. Obſerue this wind wel,
for if a beaſt after ſhe be couered, turn about directly into this wind, ſhe will for certaine con-
ceiue a female. And thus much of the Line in the Quadrant next to the North point on the
Eaſt ſide.

The third line from the North point (which we drew firſt through the latitude of the ſhadow
beforeſaid, and which we called Decumana) pointeth out the Equinoctial Sun-riſing in March
and September; directeth thee alſo to the Eaſt wind vnder it, called in Latine Subſolanus, and
in Greek Apeliotes. Where the climat is healthful and temperat, let vineyards be planted and
arranged into this wind: let ferm-houſes alſo in the country be ſo built, as the dores and win- H
dowes open into it. This wind loueth well to be dropping, and to diſtil gentle ſhoures of rain;
howbeit drier it is than the Weſt wind Favonius, which bloweth ouer-againſt him from the E-
quinoctial Sun-ſetting full Weſt, called in * Zephyrus. Vpon this Weſtern wind Oliue rowes
ſhould ſtand, according to *Catoes* mind. This wind is he that beginneth the Spring: this winde
openeth the veins and pores of the earth, and with his milde coldneſſe is healthfull and whole-
ſome for all plants, for man alſo and beaſt. This wind gouerneth this whole ſeaſon, and preſcri-
beth the time for pruning Vines, for ſarcling and dreſſing corne, for planting trees, for graffing
fruit, for trimming and ordering Oliues; and to ſay all in one word, ſo kind he doth breath, that
he cheriſheth and foſtereth the earth and all things thereupon.

The fourth line in your quadrant or compaſſe (reckoning from the North point, which alſo I
reacheth next to the South point on the Eaſt ſide) noteth the Sun-riſing in mid-winter when
the day is ſhorteſt; and withall the Southeaſt wind called in Latine Vulturnus, and in Greeke
Eurus; which as it is a drier wind than the two laſt named, ſo is it alſo warmer. In regard where-
of it is good to ſet Bee-hiues and plant vines tending into this courſe, I meane in other parts of
Italy remote from the ſea, and alſo in Gaule. Then ſhall you haue to blow full oppoſit vnto it
the wind Corus, directly from the ſun-ſetting in mid-ſummer when the day is longeſt: by-weſt
from the North; and this North-weſt wind the Greeks call Argeſtes: one of the coldeſt he is,
like as all they be wich blow from any point of the North. No maruell therefore if he be as
much dread and feared as the North winde Septentrio, for commonly he bringeth with him
haile ſtormes good ſtore. K

As touching the Southeaſt wind Vulturnus, if the coaſt be cleare where and when he begin-
neth to riſe, it will not be long ere he lie, and commonly hee is down before night; but the Eaſt
wind indeed continueth moſt part of the night. But be the wind what he wil be, if he blow ſen-
ſibly hot, you ſhall haue him hold many daies together. And to conclude, would you know
when to haue a North-weſt wind? marke when the earth drieth ſuddenly at one inſtant, it will
not be long but he wil be with you: contrariwiſe, when you ſee the ground moiſt and wet with
a kind ſecret dew vnſeen and vnknown, reckon vpon it that ſhortly you ſhal haue a South wind
to blow. And thus much for winds.

Chap. XXXV. L

¶ *Signes to prognoſticate what weather is toward.*

HAuing thus ſet down ſufficiently a diſcourſe of the winds, becauſe I would not re-iterate
one thing often, what remaineth now, but in good order to paſſe & proceed to the prog-
noſtication and fore-knowledge of the weather? and the rather, for that I ſee that *Virgil*
tooke great pleaſure herein, and ſtood much vpon this point: for thus he relateth vnto the rude
and ignorant men of the countrey, That oftentimes in the very mids of harueſt hee hath ſeene
whirle-puffs and contrarie winds encounter and charge one another as it were in battell, doing
much harme to corne. Moreouer it is reported, that *Democritus* at what time as his brother *Da-*
maſus was entred well into harueſt worke, taking the opportunity (as he thought) of a moſt hot M
ſeaſon, beſought him earneſtly to let the reſt of his corne ſtand ſtil a while longer, and to make
haſt to get that into the Barne vnder roufe, which was cut and reaped downe; and this he did
without any reaſon by him made, why and wherefore. And what enſued hereupon? Surely
within few houres after, there poured downe a mightie ſhowre of raine, and prooued *Democri-*
tus

A tus to be a wiſe man and a true prophet. Moreouer, it is a rule commonly giuen and obſerued,
That neither Reeds would be ſet & planted but toward rain, nor corn ſowed but againſt a good
ſhowre. And therfore ſince this skil is of ſuch importance, I am content briefly to touch thoſe
ſignes that foreſhew what weather will be, and make choiſe of ſuch which by ſearch and expe-
rience are knowne principall and make moſt for this purpoſe.

And firſt begin I will at the Sun, the beſt prognoſticator of all others: When he riſes cleare
and not fiery red, it is a ſigne that the day will be faire, but if he ſhew pale and wan, it preſages
a cold winter-like haile-ſtorme that very day: but in caſe he went downe ouer-night cleare and
bright, and ſo roſe the next morning, ſo much ſurer may you be of faire weather. If the Sunne in
riſing ſeeme hollow, he foretelleth rain: and when before his riſing, the clouds be red, the winds
B will be aloft that day; but in caſe there be ſome blacke clouds intermingled among, you ſhall
haue raine withall. If the raies and beames of the Sun be red, both when he riſeth and when hee
ſetteth, there wil fall good ſtore of raine. Are the clouds red about the Sun as he goes downe?
you ſhall haue a fair day the morrow after. If when the Sun doth riſe you ſee flying clouds diſ-
perſed, ſome into the South, and others Northward (ſay all be cleer and faire otherwiſe about
him) make reckoning that day of wind and raine both. Marke at his riſing or going downe, if
his beames be ſhort and as it were drawne in, be ſure of a good ſhowre. If at the Suns ſetting it
raine, or that his raies either looke darke and blew, or gather a banke of clouds, ſurely theſe be
great tokens of tempeſtuous weather & ſtorms the morow after: when in his riſing the beams
ſhine not bright and cleer, although they be not ouer-caſt with a cloud, yet they portend rain.
C If before he riſe, the clouds gather round together like globes, they threaten ſharpe, cold, and
winter weather: but in caſe he driue them before him out of the Eaſt ſo as they retire into the
Weſt, we haue a promiſe thereby of a faire time. If there appeare about the bodie of the Sun, a
circle of clouds compaſſing it round, the nearer they come about him and the leſſe light that
they leaue him, the more troubled and tempeſtuous weather wil follow: but in caſe he be enui-
roned with a double circle, ſo much more outragious and terrible wil the tempeſt be. If perad-
uenture this happen at his riſing, ſo as the ſaid clouds be red againe which compaſſe the Sun,
look for a mighty tempeſt one time or other of that day. If haply theſe clouds encloſe him not
round, but confront and ſeeme as if they charged vpon him, look from whence they come, from
that quarter they portend great wind: and if they encounter him from the South, there will
D be raine good ſtore and wind both. If as the Sun riſeth he be compaſſed with a circle marke on
what ſide the ſame breaketh and openeth firſt, and from thence look for wind without faile: but
if the ſaid circle paſſe and vaniſh away all at once equally, as well of one part as another, you
ſhal haue faire weather vpon it. If at his riſing you ſee him to caſt his beams afar off among the
clouds, and the mids between be void therof, it ſignifieth raine. If he ſpread his beames before
he be vp and appear in our Horizon, look for wind and water both. If about him toward his go-
ing down there be ſeene a white circle, there will be ſome little tempeſt and trouble ſome wea-
ther that night enſuing: but in ſtead thereof if he be ouer-caſt with a thicke miſt, the tempeſt
will be the greater and more violent. If the Sunne couchant appeare fierie and ardent, there is
like to be wind. Finally, if the circle aforeſaid be blacke, marke on which ſide the ſame brea-
E keth, from thence ſhal you haue bluſtering winds. And ſo an end of the Sunne and his progno-
ſtications,

Now by right, the Moone challengeth the next place for her preſages of weather to come.
Firſt and foremoſt, the Ægyptians obſerue moſt her prime: or the fourth day after the change:
for if ſhe appeare then pure, faire, and ſhining bright, they are verily perſuaded that it will bee
faire weather: if red, they make no other reckoning but of winds: if dim and blackiſh, they look
for no better than a foule and rainie moneth. Mark the tips of her hornes when ſhe is fiue daies
old, if they be blunt, they foreſhew raine; if pricking vpright and ſharp pointed withall: they al-
waies tell of winds toward: but vpon the fourth day eſpecially, this rule faileth not, for that day
telleth trueſt. Now if that vpper horne of hers only which bendeth Northward, appeare ſharpe
F pointed and ſtiffe withall, it preſageth wind from that coaſt: if the nether horne alone ſeem ſo,
the wind will come from the South: if both ſtand ſtreight and pricking at the point, the night
following will be windie. If the fourth day after her change, ſhe haue a red circle or Halo about
her, the ſame giueth warning of wind and raine. As for *Varro* he (treating of the preſages gathe-
red from the Moone) writeth thus: If (quoth he) the new moon when ſhe is juſt foure daies old,

put

put her horns direct and streight forth, she presages thereby some great tempest at sea presently to follow, vnlesse it be so that she haue a guirland or circle about her, and the same cleer and pure; for then there is good hope that there wil be no foule nor rough weather before the full. If at the full, one halfe of her seeme pure and neat, a signe it is of a faire season; if it be red, the wind will be busie; if enclined to blacke, what else but raine, raine. Doe you see at any time a darke mist or cloud round about the body of the moone? it betokeneth winds from that part where it first breaketh: and in case there be two such cloudie and mistie circles enuironing her, the tempest will be the greater: but how if there be three of them for failing, and those either black, or interrupted, distracted and not vnited? surely then there wil be more storms & more. The new moone whiles she is croissant, if she rise with the vpper tip or horne blackish, telleth beforehand that there will be store of raine after the full, and when she is in the wane: but if the nether tip be so affected, the rain will fall before she be at the full. But what if that blacknesse appeare in the middle of her body betweene; then (saith *Varro*) it will poure of rain in the very full. A full moone hauing about her a round circle, sheweth that there will be wind from that part, where the said circle is most splendant. If her hornes appeare when she riseth, more grosse and thicke than ordinarie, look soon after for a terrible tempest and and stormie weather. If she shew not in our Horizon before the prime or fourth day after the chaunge, and the West wind blow withall, then that moone throughout threatneth cold and winter weather: and if the day after the full she seeme extraordinarily enflamed, she menaceth vnto vs sharp showres and bitter tempests. Finally, in euery moon there be eight points and so many daies (according as she lighteth vpon the angles of the Sunne) which most men obserue onely, and take their presages of future weather by, to wit, the third, seuenth, eleuenth, fifteenth, ninteenth, one and twentieth, seuen and twentieth, and the very day of her conjunction or chaunge.

In the third place, a man may know the disposition of the seasons by the fixed starres, and therefore it behoueth to obserue and marke them. They seeme otherwhiles in the sky to flit and run too and fro, and then we shal not be long without great winds, rising from that quarter where such appeared and gaue token.

The starrie skie, if it shew cleare and bright al ouer, and in euery part alike, during that particular season [namely, between the occultation of the Harp-star, and the Æquinoctiall point] which I proposed and set downe heretofore, it is a fore-token of a faire and drie Autumne, but yet cold.

If the Spring add Summer both, passed not cleare without some raine and wet weather, it will be an occasion that the Autumne following shall be drie, and lesse disposed to wind; howbeit, thick, muddy, and enclined to mists. A faire and drie Autumne, bringeth in alwaies a windie winter.

When all on a sudden the stars lose their brightnesse and looke dim, and that neither vpon a cloud nor a mist in the aire, it signifieth either raine or grieuous tempests.

If the starres make semblance as if they flew vp and down many together, and in their flying seem whitish, they denounce winds from that coast where they thus do shoot. Now if it seeme to the eye, as if they ran and kept one certaine place, those winds will hold and sit long in one corner: but in case they do so in many quarters of the heauen, they betoken variable and inconstant winds, going and comming, and neuer at rest. [When you see a circle about any of the other fiue planets or wandring stars, you shall haue powring showres soone after.] Within the signe Cancer, there be two prettie stars which the Mathematitians call Aselli, [*i.* little Asses] betweene which there seemeth to be a small cloud taking vp some little roome, and this they name in Latine Præsepia, [*i.*a Crib, Cratch, Bowzey, or Manger:] now if it chaunce that this Racke or Crib appeare not, and yet the aire bee faire and cleare otherwise, a signe it is of cold, foule, and winter weather. Also if one of these two little stars, to wit, that which standeth Northerly, be hidden with a mist, then shall you haue the South wind so rage; but in case the other which is more Southerly, be out of sight, then the Northeast wind wil play his part.

As touching the Rainbow, if it appear double as if there were two of them at once, it telleth of raine toward. A Rainebow presently after raine, is a signe of faire weather: but this is not so certaine, neither will it hold long. Also, when a man seeth new circles still about any planets, there will be much raine soone after.

In Summer time, if there chaunce to be more thunder than lightning, it threatneth winds from

from that coast where it thundreth: contrariwise, if it lighten much & thunder little, looke for rain plentie: when you see it lighten, and the skie otherwise cleare & faire, it is a token that rain and thunder will follow thereupon, yea and rigorous cold weather besides: but the cruellest and most bitter impressions of the aire, ensue vpon such lightnings as come from all the foure quarters of heauen at once: if it lighten, from the Northwest only it betokens rain the day following; if from North, it is a signe of wind from thence: if from the South, Northwest, or full West, it happen to lighten in the night & the same be faire, it sheweth wind and rain from out of those coasts: morne thunders foreshew winds, but if they be heard at noon, they presage rain.

As touching clouds, if you see the rack ride apace in the aire, the weather being faire & drie, looke for wind from that quarter whence those clouds doe come; and if they seeme to gather thick in that place, dispearsed they will be and scattered when the Sun approacheth: but more particularly, if this happen from the Northeast, they portend rain; if from the South, storm and tempest: if at the Sun setting the rack seeme to ride from both sides of him into the open aire, they shew of tempests toward: if the clouds be very blacke, flying out of the East, they threaten rain against night: but if they come out of the West, it will surely raine the morrow after, if the clouds be disparkled many together out of the East, and flie like fleeces or flocks of wooll, they shew rain for 3 daies after: when clouds flie low, and seeme to settle vpon the tops of the hills, looke shortly for cold weather, contrariwise, if you perceiue those tops of mountaines cleare without moist or cloud, the weather will soone take vp and turne to be faire: when the clouds seeme to be heauily charged and full, and yet looke white withall (which * constitution of the aire is called commonly the white weather) there is an haile-storme at hand: moreouer, be the skie neuer so cleer, the least cloud appearing therein, is enough to engender and foreshew wind and storme: mists if they come downe and fall from the mountaines, or otherwise descend from heauen and settle vpon the vallies, promise a faire and drie season.

* Some call them Towers.

Leauing the stars and clouds aboue, let vs come to our fire that we make and keepe in our houses here beneath, for they are to be raunged in the next place of our prognostication. If the fire then burne in the chimney pale, and keep there with a huzzing noise, we find by experience it foreshewes tempest and stormie weather: as also wee may be sure of rain, in case we see a fungeous substance or foot gathered about lampes and candle snuffs: if you see the flame either of fire or candle mount winding and wauing as it were, long you shall not be without wind. The like is to be said of fire and candle light, if either they seem to go out of themselues, or to kindle and take fire with much adoe. Also, when we discern in the fire a number of sparkles gathered together and hanging one to another: or if when the pot is taken off from the fire, the coles sticke to the bottome and sides: or when the fire being raked in embres, keepeth a spitting and sparkling from it: also, if the ashes lying vpon the hearth grow together: and last of all, when the liue-cole shineth brighter or scorcheth more than ordinarie, all these be signes of rain.

Goe we a little lower to the water, for that element also giues signes of the weather: and first of all, if you see the sea within the hauen, after the flood is gone, in a low and ebb water to bee calme, and yet heare it keep a rumbling noise within, it foreshews wind: if it doe thus by times and fits one after another, resting stil and quiet between whiles, it presages cold weather & rain. *Item*, if in calme and faire weather the sea strond or water banks resound and make a noise, it is a token of a bitter tempest: so it fares also with the very sea it selfe; for if it be calm, & yet make a roaring, or if the fome thereof be seen to scatter to & fro, or the very water to boile & buble, you may be bold to foretell of tempests: the Puffins also of the sea, [*i.* fishes named in Latin Pulmones] if they appear swimming aboue water, foresignifie cold weather for many daies together: oftentimes the sea being otherwise calme, swells, & by hooding higher than ordinarie, shewes she had wind good store enclosed within her, which soon after will breake out into a tempest.

Let vs come aland againe, and marke the disposition of woods and hills: you shall heare the mountains and forrests both, keep a founding and rumbling noise, and then they foretell some change of weather, nay you shall mark the leaues of trees to moue, flicker, and play themselues, & yet no wind at all stirring, but be sure then you shall not be long without. The like prediction is to be gathered by the light downe of either poplars or thistles flying too and fro in the aire; also of plumes and feathers floting vpon the water. Goe down lower to the vales & plains: if a man chance to heare a bustling there, he may make account that a tempest will follow. As for the rumbling in the aire, it is an vndoubted signe and token thereof.

Moreouer, the verie brutt and dumb-creatures presage and giue warning what weather there will be. To begin with the fishes of the sea: the dolphins playing & disporting themselues in a calme water, doe certainely fore-shew wind comming from that coast whence they fetch these friskes and gambols: contrariwise, if they fling and dash water this way and that way, the sea at that time being rough and troubled, it is an infallible signe of a calm and of faire weather toward. The Cuttle or little Calamarie Loligo, launching it selfe and flying aboue the water; the Cockles & winkles cleauing and sticking hard to the grauell, the Sea-vrchins thrusting themselues into the owse and mud, or otherwise balaised & couered with sand, be all signes of tempests neare. The like may be said of Froggs, when they crie more than their custome is, and of Seamews also, when they gaggle in a morning betimes extraordinarily, semblably, the Cormorants, Gulls, Mallards, and Ducks, when they keep a proining of their feathers with their bills, foreshew wind: and generally, when you see other water-foule to gather and assemble together and then combat one with another, or Cranes make haste to flie into the midland parts of the maine. The Cormorants and Guls flying from the sea and standing lakes, and Cranes soating aloft in the aire still, without any noise, doe put in comfort of a faire and drie season: so doth the Howlat also, when she cries chuitt in rainie weather: but if it be then faire and drie, we shall be sure to haue foule tempests for it afterwards: Rauens crying one to another as if they sobbed or vexed therewith, and besides clapping themselues with their wings, if they continue this note, doe portend winds; but if they giue ouer between-whiles, & cut their crie short as if they swallow it backe again, they presage rain and wind both. Iacke-dawes, if it be late ere they returne from their reliefe abroad, foretoken cold and hard weather; so do the white-birds when they assemble and flock together, as also when land-foule (and the crow especially) keep a crying against the water, clapping their wings, washing also & bathing themselues. If the Swallow flie low and so neere the water, that she slap the same oftentimes with her wings, it is a sign of rain and foule weather. Semblably, all other birds that nestle in trees, if they seem to make many flights out, but returne again quickly to their nests. Moreouer, if Geese hold on a continuall gagliug out of all order vntunably, a man may guesse no better by them, no more than he can of the Heron which he seeth heauy and sad vpon the sands.

And no maruell that these riuer-foules, or generally any other birds of the aire whatsoeuer, should haue a secret presage and foreknowledge of the disposition of the aire; for the very four-footed beasts of the earth doe make shew thereof by their behauiour. The sheep and such small cattaile, leaping and playing wantonly, dancing also as vntowardly without measure, doe testifie some change of weather: nay the dull and heauie oxen holding vp their nose and muzles, snuffe and smell into the aire, yea and keep a licking against the haire [toward rain.] Also when you see the foule and filthie hogs, rend, teare, and fling about them bottles of hay, and yet they care not for it when they haue done, because it is no meat for them: likewise if you perceiue the pismires or ants either lying close and idle, full against their nature (whose propertie is to be industrious and euer busie) or encountring one another in battailewise, or else carying their egs abroad out of their holes. Finally, when the mads or earthwormes come forth and appeare, a man may be bold to foretel of a change in the weather.

What should I say more? It is knowne for certaine, that Clauer-grasse or hearbe-Trefoile will looke rough against a tempest, yea and the leaues thereof will stand staring vp as if it were afraid thereof. And to conclude and make an end once of this discourse, whensoeuer you see at any feast the dishes and platters wherein your meat is serued vp to the bourd, sweat or stand of a dew, and leauing that sweat which is resolued from them either vpon dresser, cupbourd, or table, be assured that it is a token of terrible tempests approching.

An

An Index pointing to the principall matters contained in the first Tome of *Plinies* Naturall Historie.

A B

Abdace, a roe-bucke in Affricke. 331.d
Abdomen, what it is. 344.i
Abricots. 436.k. of two sorts. ibid. good for sicke folke. 436.f. must be soon spent. ibid.
Absides what they are. 10.k
Abstinence of Iulius Viator. 166.g

A C

Acacia Ægyptian thorne. 390.l.m
Acacia, a gum. 391.g
Acapnon the best kinde of hony. 478.7
Acarnania drowned. 40.l
Acca Laurentia, nource to Romulus, and his foster-mother 549.c.
Accord among beasts. 308.l.m
Acedon, a kinde of good hony. 317.b
Achaia the description thereof. 74. h. drowned in Corinth guisse. 40.l
Achilles Iland famous, and why. 83.c
Achilleum, a kinde of spunge. 262.b
Acilius Sthenelus a good husband. 411.c
Acontias a kinde of comets. 15.c
Acorne the best mast. 458.m. of diuerse sorts. 459.a
Acre what it was at Rome. 550.g
Actus what measure in Rome. 565.e
Acylon, what it is. 458.m

A D

Adarce what it is. 483.d
Adlipsos, the Ægyptian Date. 344.l.m
Ad-Gallinas, what place. 553.f
Adelphides, Dates, why so called. 387.e
Adoreus, glory, why so called. 551.a
Adoreum. 562.m
Adrachne, a tree. 541.c. 399.c
Adulteries imagined among the gods. See gods.
Adonis, a fish. 247.b

A E

Ægilops, an oke. 459.e
Ægis what it is. 487.b
Ægle, free from the stroke of lightning. 27. e. her nature. 273.d. burneth her selfe. ibid. f. of six kindes. 271. d. quicker of sight than men 305.f. how they build, breed, and hatch. 172.d. their manner of preying. 273.a. they die for famin. ib. their feathers amoure other birds feathers. 273.b. they prey vpon deere. 273.c. they be at mortall warre with dragons. 273. d. an Ægles loue vnto a virgin. ibid. e.f
Ægle, the chiefe standard of a Romane legion. 273.c
Ægle imagined to be Iupiters armour-bearer, & why. ib.b
Ægocephalus, a bird without a spleene. 343.c
Ægypt not subiect to earthquakes, and why. 38.b. brag of antiquitie, and wherein especially. 98.l. Ægypt a mightie country. 545.l. free from lightning, and why. 25.d

A E

Æmylius Paulus sacked in one day 702 cities in Macedonie. 77.e
Æolus how he is said to gouerne the windes. 63.a
Æquinox of spring. 581.c. of Autumne. ibid.
Æsalo a kinde of Hawke. 274.k
Æthiopians, why blacke. 26.m
Æthiopia the description. 96. their manners. ibid.g
Æschylus the Poet killed with a Tortoise shell. 271.f
Aetites a precious stone. 272.k. medicinable. ibid.l
Ætna the hill alwaies burning. 47.b

A F

Affricke full of strange beasts. 200.k. plentifull in corne 430.k. description thereof. 93.d
Affricus wind. 22.d

A G

Age vnmeete for generation. 303.a
Agelastus, who so called, and why. 166.b
Agrophagæ, what kinde of people. 147.e
Agriculture. See Husbandry.
Agrion. 364.k
Agrippa who so called. 159.a
Agrippa his infortunities. 160.g
Agrippina, two vnhappie imps of his. ibid.
Agaricke, where it groweth. 461.b. how it is gathered. ib. for what it is good. ibid.
Ague of Antipater the Poet yeerely on his birth-day, whereupon he died. 184.g. C. Mecænas neuer free of an ague. ib.

A I

Aire, element. 2.l. giueth life for all things. ib. by the power thereof the earth bangeth. ib. the properties thereof. 18.m
no Aire of egles in Rhodes. 285.c
Aiax, the name of an Elephant. 194.k. he died for shame of a disgrace. ibid.

A L

Alauda, a legion of the Romanes. 331.a
Albanes, people eied like owles, alwaies gray headed, and see better by night than day. 154.e
Alce, what kinde of beast. 200.d
Alcibindes, a stout wine-knight. 427.d
Alcippe deliuered of an Elephant. 157.f
Alcman a Poet in Greece died of lice. 329.d
Alec, a kinde of dripping. 246.k
Alexandria the description thereof. 99.b. who built it. 123.b called Selencis, and why. ibid.
K. Alexander the great his victory at Arbela. 35.a. his care to know the nature of liuing creatures. 200.l. how he honoured Homers booke. 108.l. 171.c. he spared the family of Pindarus the Poet. 171.d. his commandement for his statue. 175.b
Alburnum in wood, what it is. 486.i
All-heale, what it is. 497.c
Alica of three sorts. 568.g

Alica Exceptitia, Secundaria, Crebraria. ib. k. where and how it is made. ibid.g
Almonds described. 446.b
Almond trees hauing no greene leaues. 473.f. when to be planted. 522.k. how sweet Almonds are made bitter. 545.c

A M

Amathyst, what colour. 259.f
Amphisbæna, a serpent. 208.g.
Amulchium, what it is. 85.c
Ambre, where ingendred. 86.l.
Ambracia the hauen, left dry land. 39.c
Amia a kinde of fish. 243.d
Ammoniacum a gum, why so called. 375.c. the kinds thereof. 375.d. the best and the price, ibid. how it is sophisticated. ibid.
Amomis. 365.d.
Amomum. 395.c. the price. ibid.d. sophisticated. ibid.
Amomum, why it entreth into aromatical ointments. 382.l
Amomum, why it will not liue in Arabia. 478.l.
Amorca, what it is. 430.l
Amylum how it is made. 562.g. why so called. ibid. sundry sorts hereof. ibid.b

A N

Anateria. See Morphnos.
Andrachne an herbe. 399.e
Androcides his sage counsell to Alexand. the Great. 413.b
Andromeda, who they be. 154.m
where ladie Andromeda was exposed to a monster. 110.l
Angerona, a goddesse. 59.c
Anthus, a bird neighing like an horse. 293.a
Antigenes, a famous minstrell. 484.g
Antichthones. 129.b
Annibal his fatherhood. 195.c
Antes, transformed into wolues. 207.c
Anthiæ fishes how they be caught. 268.m. 269.c
C. Antonius nicknamed Hybrida. 231.c
Ants, their common weale. 338.k. their forecast. ibid. how they litte. ibid. their passage weareth pibble stones. 328.l they onely burie their dead. 328.a. they stie not in Sicilie. ibid. they cast up gold in India. 329. a. where, as big as wolues. ibid. they deuoure men. 329.b. done gold well. ibid. they will not touch some kind of liuer. 342.g. burstfull to trees. 547. d. gather about fishes. ibid.
Anthropophagi, what they are. 154.b
Antipodes, whether there be any such. 31.b

A P

Apathes, who they be. 166.b
Apes most like to mankinde. 231.c. differ from monkies. ib. craftie to beguile themselues. ibid. play at chesse or tables. ibid. shee-apes fond other their little ones. 231.f
Apes store up victuals within their cheekes. 207.c
Apharenna what it is. 568.g
Apicius a famous glutton. 296.g
Apis, the Ægiptian beast. 226.g. honoured among them. ibid.b ibid. serueth as an oracle.
Apharce a tree. 399.d
Aphesia, the worst stinges. 263.a
Apogæa, what winds. 21.c
Apolectæ, what they be. 243.b
Apothecaries craft who first practised. 188.k
Apua, a kinde of fish. 265.d
Apparition of fixed starres at set times. 587.d
Applaudus what it is. 556.f
Apples beare names of countries. 438.k. Camerina, Græcula. ibid. Gemella, why so called. ib. Serica, why so called. ib. Melupia, why so called. ibid.
hastie Apples Mustea. 438.l. Melimela, Orbiculata, Epirotica, Orthomastica, Spadonia, Melofolia, Pannucia, Pulmonea. ibid.
all Apples red on the Sun side. 438.m
Apples Dacian. 439.a. winter apples. ibid.f
Apples de guard. 440.l. how to be kept. ib.g.b
what Apples will last, and what will not. ibid.
Apple trees bearing fruit twice a yeare. 474.m
quince Apples. 438. i. Apples Appian, Matian, Sellian, Manlian, Claudian, Scantian, Sceptian, Quirian, Petisian, ibid. Apples what fruit properly. 437.f
Apples haue eternized the name of their first inuentors & graffers. 438. i. Apple trees dearely rented at Rome. 499. d. tendrest of all other trees. 540. k. diseased. ib. how they be made fruitfull. 545. d. apples how kept from rotting. 574. d. apple trees when to be grassed. 518.l
Apyrinon, a kind of Pomegranat. 398.b

A Q

Aquiceti, pine nuts confected. 436.g
Aquifolia. 458.l
Aquitania described. 87.d

A R

Arabia, why called Happy. 365.f. 371.d
Aranеus, an imperfection in wines and oliues. 540.a
Aratrare, what point in husbandry. 580.b
Araxi, or Oraxi, springs medicinable. 568.i
Arbute tree described, and the fruit. 447.d
Archers & arrowes haue conquered halfe the world. 482.k
Candiots excellent archers. ibid.
Arcturus the star cause of tempests. 19.e
Arethusa a strange lake. 137.b
Argatilis a bird. 288.l
Argo a ship, of what wood it was made. 399.b
Architecture, who excelled therein. 175.b
Arimasians, with one eie in their fore-head. 154.b
Arinca, a graine all one with Olyra. 568.k. it makes sweet bread. ib. hard to be cleansed. ib. what kind of corn. 559.c
Aristæus mingled hony with wine. 412.b
Arion mounted upon a dolphins backe. 239.f
Aristomenes the Messenian had a hairy hart. 340.k. slew three hundred Lacedemonians alone. ibid.
Aristotle employed by K. Alexander the Great about the liuing creatures. 200.m
Armes of men not all of a iust measure. 549.d
Armuphea, people, their life and strange manners. 121.a
Armeniaca. See Abricotti.
Armor heard rustling in heauen. 28.g
Artabita, men wandring like foure-footed beasts. 147.e
Artenon, a man like to Antiochus K. of Syria. 161.d
Arteries from the heart minister vitall blond to all parts. 340.b. how to obserued in their pulse or beating. 345.b
Articulatio, a disease proper to vines. 540.b
Artisans excellent. 175.b
Artolagantes. 566.l
Artopta, what it is. 567.b
Artoptitius panis. 566.m
Arundo, what it is. 229.e

A S

Asarum or Asara-baca described. 365.b
Ascia, places where no shadowes be yeelded. 36.b
Ascitæ, Arabians, why so called. 144.m
Asclepiades recouered one that was carried forth as dead. 175.a
Ash-tree, where it is alwaies greene. 48.g. ash tree described. 465.e. commended by Homer. ibid. the wood of the ash in Ida like to Citron. ibid. ash of two kindes. 466.f. the leaues hurtfull to what beasts. 466.g. the iuice of the leaues medicinable. ib. the shadow skareth serpents. ibid. the leaues drive away serpents. 466.h
Asia a kinde of Rie. 572.l
Asia, the description thereof. 96. a great part thereof vnhabitable by reason of cold. 120.m
Asiæ. See Otys.
Aspalathus, a shrub. 376.g. the price. ibid.b
Asphaltites, lake of Sodome. 101.c. no liuing creature therein. ibid.
Aspe trees turne to be Poplar. 543.c
Aspis the serpent hath her affection, and is a iust reuenger. 309.a. dischargeth her poison by the teeth. 337.c. the nature of Aspis. 208.b
Assabinus, the god of Cinamon plants. 372.l
Ashes of fuell burnt, much set by beyond the Po. 507. a. serue to enrich ground. ibid. of the same nature that salt. 546.l.
Ashes of lime-kils encrease olive trees. 507.e
Asses cannot away with cold. 223.b. when they shed teeth. 338.b. their icalousie and leachery. 212.l. of great price. 223. a. their manner and time of generation. ib.b. the gaine that they bring by breeding. ibid.c. their foles good meat. ibid.e. their other properties. ibid.c
Asses of India with one horne. 351.b
Asses wild. 20.g
Assyrian tree. See Citron tree.
Astomes, people without a mouth. 156.i
Astronomers their commendation. 8.m. 9.a. who most excellent. 174.l. their three sects. 586.b
Astronomie necessarie for agriculture. ibid.a
Astrologie who first deuised. 189.d
Astrologers opinion touching the length of mans life. 181.f
Asturcones, what horses. 222.m
Asturius Celer, a prodigall spender. 246.k

A T

Atabulus, an vnluckie wind in Apulia.
Ateramum. 575.b
Atlas hill. 92.g. the strange trees thereon growing. 92.b
Atlantes people, their strange manners. 96.i. they dreame not in sleep. ibid.
Atlanticke sea sometime the continent. 40.l
Atomus, what it is. 367.e

A V

Augurie and Auspices by birds, who first inuented. 189.c honoured in Rome. 211.f
Augustus Cæsar, whether he were happy. 179.c. his fortunes compared. ibid. he desired Proculeius to kill him. 179.e fasted foure dates and foure nights. ibid. hee saw his line all descent vnto the fourth degree. 162.l. his conduct discouered many seas. 32.k. superstitious in presaging that his left foot shoo was put on before the right. 41
Augyæ, people worshipping onely the dineis beneath. 96.i
Auiola burnt quicke. 184. b. he reuiued in the funerall fire. ibid.
Auleticus Calamus, a kind of reed. 483.b.e

A X

Axis, an Indian beast. 206.k

B A

Babylon territory exceeding fruitfull. 576.i
Babylon the citie described. 136.b
Babylonicæ vestes, what they are. 228.i
Baccharis. 364.l
Bacchi, a kind of codfish. 245.e
Bacchus, when borne, how. 128.l
Bacchus first wore a coronet or garland. 456.m
Backebiters haue venomous tongues. 548.m
Bactrian, a plentifull country for corne. 581.e
Bactrian corne exceeding big. 561.
Bagous what he is. 387.b
Bailiffes of husbandry. 555.a
Bakers when they began in Rome. 557.b
Balaustia. See Pomegranate flowres.
Bald-raueni. See Plugeons.
Balena what fish. 235.f. 236.l
Balena and Pristis, greatest fishes in Indian ocean. 235.f
Balls of the cheeks forbidden by law to be scratched. 336.i the seat of bashfulnesse and modestie. ibid.
Balme trees of three sorts. 376.l
Balme tree groweth no where but in Iurie. 478.k
Balme trees brought to Rome. 376.i. how they are planted and ordered. ibid.k. their description. ibid.
Balme trees saued by the Romanes at the destruction of Ierusalem. 376.k
Balme fruit or graine. 377.e
Balme graine how sophisticated. ibid.
Balme barke. ibid.
Balme liquor most pretious. 376.i. balme liquor how sophisticated, and how discerned. 377.e. balme liquor how it is drawne. 376.m. balme liquor which is best. 377.c
Balsamodes Cassia. 373.e
Bands or bindings in husbandry, of what trees and plants they are to be made. 445.b
Barbata, a kinde of hawke or egle. 272.k
Barbers first entertained in Rome. 190.m
Barble fishes. 246.b. their description and nature. ibid. why called in Latine, Mulli. 246.i
Barke of trees is their hide. 486.b
the barke moisture of trees is their bloud. 486.g
Barke of trees how to be vsed. 541.e
Barking of trees. 487.d
Barks of sundry trees, how employed. 461.d
Barks of trees different. 477.a
Barley a tender corne. 562.b. how to be cut downe, and at what time. ibid.
Barley how it is eared and iointed. 558.k
Barley where it groweth twise a yeare. 503.e
Barley doth degenerate into oats. 574.g
Barley a most ancient meat. 561.c. condemned. ibid.e
Barley vsed in Physicke, and to feed cattell. 562.b.i
Barley different in eare and otherwise. 562.i
Barnes, how and where to be built. 603.b

The Table to the first Tome

Barraine beasts stone fat. 344.k
Barrainesse of earth, how it is found. 504.i
the Basiliske. 196.l. his properties. ibid. his venome. 207.a killed by the weazill. ibid.
Battaile first fought. 189.a. battaile at Sibaris. 197.d. in two battailes in one day, both on sea and land, Numenius defeited the Persians. 140.b
a Bat or winged mouse only among st the foules, hath teeth. 337.d. Bats bring forth young alive. 301.f. the onely bird that giueth milke. 302.g
Bay trees: see Lawrell. Bay leaues purge the gorge of birds. 211.c.

B D

Bdellium. 362.m. sophisticated. 363.a. See Brochot. the triall. 363.b. the price.

B E

Beans principall of all pulse. 568.l. beane meale. ibid. beane stalkes in Aegypt full of pricks. 569.d. beanes how to be prepared before they are set or sowne. 575.d. beanes and vetches sowne vnder furrow. 580. g. beanes yeelding great encrease. 565.b. beanes forbidden by Pythagoras to be eaten. 569.a. the arch Flamin abstaineth from beanes, wherefore. 569.b. beanes vsed in portsales. 569.b when they are to be set or sowne. ibid. b. kidnie beanes. 570.i. beanes sowing doth enrich a ground. 569.c. beans growing of their owne accord, ibid.d
Beares onely haue no marrow at all. 344.m. how they engender. 302.l. beares haue the tenderest sculls. 332.l. beares cure themselues with pismires. 211.c. bears, their beares cure themselues with pismires. 211.c. bears, their manner of generation. 215. f. their young imperfect. 216.g. they grow exceeding fat. ibid.b. their fat medicinable. ibid. they seeke to the herbe Wake-robin. ibid.i they are subiect to dimnesse of sight. ibid.i. weake in the head. ibid.k. their braine venomous. ibid. hunted in the shew-place at Rome. ibid.l
Beasts accounted for gods. 3.c. beasts of India very bigge. 155.b. beasts engendred in the vnhabitable places of the earth, and the reason. 11.b. beasts that drauke lastly, bleed most at their death. 346.b. beasts bring forth yong according as they are whole hoofed or clouen. 303.a. beasts, which bring their young perfect, which imperfect. ibid. beasts will not touch where beares haue breathed. 356.a. beasts foure-footed commonly rest on their right side. 350.k. beasts by whom first killed. 190.k.
Beech wood highly esteemed. 486.m. a beech groue finely kept and consecrate to Diana, 496.g
Bees, their order and nature. 312.i. when they goe abroad. ibid.i. their first worke. ibid. their care of their kinde. ibid. their regard of their worke. 313.a. their munition. ibid.b. their greatest swarmes among olive trees. ibid.d. they hurt no fruit. ibid. they wander not from their hiue aboue sixtie paces. ibid. they send out spies. ibid.e. how they watch. ibid. their foresight. 314.g. how they lade themselues. ibid.h. their seuerall offices. ibid. bees of two sorts in one hiue. ibid.k. they goe with the wind. ibid.l. their pollicie against the wind. ibid. they punish slothfulnesse. ibid. their cleanelinesse. ibid. their silence towards night. their hatred to the drones. 315.b. their buildings for their captaines. ibid.c. how they are driuen away. 316. k. bees, when they are nourished with sleepe onely. 317.e. they abhor a theefe. ibid. their fidelitie to their king. 319, c. bees setled on Plato his month. ibid.d. bees in the campe of Generall Dyrsus. ibid. why sometimes they fight. 320.g. bees after they haue stung, be no better than drones. ibid.k. drone bees are biggest. 315.a. they take vp least lodgings. ibid. Of bees works, theyre foundations. 313.b. whom they will sting. 320. k. bees are often sicke. 320. m. bees sorrow for their dead king. 321.a. bees performe a solemnitie of exercise. ibid.e. they liue not aboue seuen yeares. ibid. how they are repaired. 322.g. bees will not touch a dead carkasse. ibid.i. bees onely make their owne meat. 328.i
Beetles haue no sting. 326.k. they are remedies for children. ibid. they are delighted in roses. 355.e
Bellerophon his letters in tables. 394.l
Bellies of the Belly. 342.k
Bellies that be fattest, cause grossenesse of capacitie. ibid.l
Belus, inuentor of Astronomie. 136.b
Ben, or Behen. 374.f.a. nut onely for sweet ointments. ib.
Benacus a lake in Italy. 248.g
Beotia riuer. 51.f
Bergnice haire, a starre. 34.l
Berries different. 447.f
Besbicus Island sometimes ioined to Bithinia. 40.i

B I

Bills giuen to birds in stead of mouthes, and their vse. 336.l.m.
Bizon, a kinde of wine medicinable. 416.i
Bizuers gueld themselues. 212.m. where they breed, their nature. 213.a
Birch tree described, and how it is employed. 468.i
Bird-ganders. 281.b.
Birdlime how it was made. 497.a
Birds singing when they ordinarily doe breed. 287.c. birds very few haue gawles in the liuers. 341.f. birds hatched with their tailes forward. 272.e. birds hauing neither veines nor arteries. 345. c. birds with hooked talons prey all. 278.k. birds how they translate their egges from place to place hauing no hooked tallons. 289. a. birds differ one from another in flight and gate. 291.f. birds how they drinke. 295.c. birds of diuers feedings. ibid.e. birds singing, alter their notes. 285.e. new birds. 296.k. birds there be none without feet. 351.d. birds language how to be vnderstood. 296.l. birds of prey least fruitfull. 297.f. birds that lay most. ibid. birds how they engender. 298. g. birds how they differ in laying and cowring. ibid.i. 300.k. birds small be fruitfull. 301.d. blackbirds counterfeiting mans speech. 293.d. blackebirds are gone for a time. 284.g. blackebirds change both hew and tune. ibid.
Births strange for number, for defects and superfluitie. 164.b.i.
Births of children vncertaine. 158.k
Birth at seuen months liue: also at the eleuenth. ib. A child legitimat borne within thirteene months, after the supposed father deceased. 159.a
Bisontus or Bœufes of Germanie. 199.f
Bissextile yeare. 588.b
Bitches differ in their litters. 303.c. bitches engender with Tigres. 219.e. with wolues. ib. how long they goe with young. 220.b. their whelpes blind. ibid.h.i
Bithye, Women witches, who haue a double sight in their eie. 155.a

Biting

of Plinies Naturall History.

Biting if a mad dog cured by Eglantine. 220.k
Bitumen comparable at the water of Styx. 47.d
Bitumen a strange slime. 163.e

B L

Bladder where it is placed. 343.f. bladder nut tree. 467.c. bladder onely there found, where is lunes and bloud. 343.f. of the bladder in man and beast. 343.f. bladder being wounded cannot be cured. 344.g
Blasted corne, 574.i
Blasts how they be occasioned. 574.l.m. blasts suddaine their names and nature. 24.k
Blatte, flies are nourished in darkenesse. 326.m
Blazing starres. See comets. Volusius Saturninus how bee vsed to bleed. 346.b
Blossoming time of trees how long it lasteth. 473.b
Blond apples. 438.l. blond rained. See Raine. blond fat and grosse breedeth anger and choller. 345.f. of blond a discourse. ibid. blond of males blacker than of females. ib. blond containeth a great portion and treasure of life. 346.g. it is without sence and feeling. ibid. blond that is thinnest, causeth strength in creatures. ibid. blond that is thinnest maketh men wise. ibid where it is but little maketh men fearefull. ib. blond of bulls soonest congealeth. ib. it is poison to be drunke. ibid. blond of Asses most fattie and grosse. ib. blond of man thinnest and best. ibid. blond is but little in those that be fat. ib. blond cast vp by many at the mouth. ib. b. blond quickest encreaseth of all parts of the body. ib. blond changeth with anger and furie. ibid.
in Blooming time raine hurtfull to corne. 574.k

B O

Boa, mightie great serpents. 199.e. why so called. ib.
Bodies of men and women different beside the distinct parts of sex. 165.e
Boats of one entire piece of wood. 490.g
Bœtica, so called of Bœtis. 51.c
Bœufes of India. 224. k. bred by king Pyrrhus. ibid.l. their manner of engendring and breeding. ibid. of feeding. 224.a. when they are to bee drawne and yoked. ibid.b. sufficient for sacrifice. ibid.c. knowne to speake. ibid.
Bolides, flaming launces in the skie. 17.b
Bombycoe, reeds or canes. 484.g
Bombycina, garments of silke. 322.m
Bombyly, the greater kinde of Bombyces. 322.l
Bombyx, a fine breeding in Assyria. ibid their hard neasts. ibid. how they engender. ibid.
of Bones. 345.a
Bonnises, what manner of beast, and his properties. 200.b
Bondwoman brought forth a serpent. 157.f
Bones of Asses legs sound shrill. 345.a. bones in some men without marrow. 165.f. bones sometime found in the hearts of beasts. 340.i
Bore, his owne Physitian. 210.m. bore serued whole vnto the board. 230.l
Boreas wind. 23.a
Borysthenes riuer. 154.i
Bosphori the streights (Thracius and Cimmerius.) 117.f. why so called. 115.a. Bosphori sometime land. 40.l
Botanismos, what it is. 577.a
Boulters and Raungers. 567.c
Box tree wood commended in the root most. 467.c. box tree serueth for arbours. ibid. of box tree three kindes. ibid.c. where it delighteth to grow. ibid.d. the nature of the floure and wood. ibid. box tree beareth varietie of fruits. 476.g

B R

Brake, see Ferne.
Braine of a Date tree. 486.m
Brambles of three sorts. 485.e. with a blacke berry, with a rose, and a red berry. ibid.f. the bramble Idæa, which is Raspis. ibid.
Brance, what corne. 559.d
people Branded with hot yrons. 116.b
Brasse, where first found. 80.m. brasse-founders the first. 188.k. brasse forges and furnaces, who deuised. ibid.k.
Brawne of wilde bores in great request. 230.l
Braines the coldest part of mans body. 332.m. they are without bloud or veines. ibid. by seething they waxe hard. 333.a. without flesh, blond, filth or ordure. ibid. braines, the fort and castle of the sences. ibid. braines and eies die first. 340.g. of braines and the braine-pan. 332.l.m.
Bread of sundry sorts, according to the meat eaten therewith. 566.l. bread Parthicke or water-bread. 567.a
Breadth of the earth. 48.i
Breath of Lions stinketh. 255.a. breath of beares pestilent and deadly. ibid. breath of men by what meanes it is infected. ibid.b. breath of man shall returne into the aire. ibid.it is corrupted by much drinking of wine. ib. breath of Elephants, what vertue it hath. 355.c
Breeding time in plants. 471.a
of the Brest in man and beast. 343.e.f
Breast apples. 438.l
Bricke and tile who deuised. 188.k
Brickes and tiles raigned. See Raine
Brimstone mine. 568.i
Brim of the eie-lids being wounded, cannot be drawne together. 336.i
Brittaine, an Island renowmed. 86.k
Brocci, who they were. 336.l
Brochos what it is. 363.a
Brood-hen starre, Virgilia. 588.b
setting of brood-hens. 589.f
Broome, where and when to be set. 523.c
Bruscum in maple. 467.a
Bruta, what tree. 371.a
Brutium a promontory. 51.b
Bryon (Aromaticum) what it is. 375.d
Bryon a weed in the sea. 401.e

B V

Bubetij, what plaies they are. 550.k.
Bubulcus surname to the house of Iunij, whereupon. ib.b
Bucephalia the citie. 221.a.
Bucephalus King Alexanders horse. 220.l. his description and rare qualities. ib.m
Bucklers of what wood they be made. 590.k
Buffles horne of eight gallons. 331.f. buffles horne how it is vsed. 332.g
Building vpon land in the country. 554.g.b
Bull baiting. 225.a
Buying and selling who deuised. 187.e
Bulls wild vntameable. 206.i
Bullaia. 437.a

Bumast

Bumasti grapes. 405.a
Bumelia, a kinde of Ash-tree. 465.f
Bunches in wood. 487.l
Bura citie. 41.a
Burning and burying of dead-bodies after diuerse sorts. 186.l.m.
Butter hath the vertue and properties of oyle. 340.k
Butterily how it is bred. 329.e
Butterflies no good signe of the Spring. 586.g
Buteo. See Triorches.
Buteo gaue the name to the house of Fabi in Rome. 274.k
Buzzards good meat. 296.k
Buzzard. See Buteo.

B Y

Byzacium territory of Affricke. 505.e. *most fruitfull ground.* ibid.
Byzia a castle of Thracian kings, hated of Swallowes, and why. 278.l

C A

CAchrys in an Oke, what it is. 400.l. *the vse and manner thereof.* ibid.
Cadytas, what it is. 496.i
Cadmus, where borne. 108.g. *first found out for to write prose.* ibid.
Caesius wind. 23.a
Cacina his practise by Swallowes. 283.a
Caesares and Caesones, why so called. 160.i. *such commonly fortunate.* ibid.
Caesar his breast-plate made of English pearle. 256.k
Caesar Dictator his liberalitie in wines. 160.i
Caesar ript out of his mothers belly. 168.k
C. Caesar his quickeneſſe of spirit. ibid.l
Caesar repented him of his clemencie. 168.m
Caesar his fidelitie concerning writing. 34.l
Caesar is Thronos, a starre. 53.d
Caesaria, a citie in Mauritania. 273.c
Caius Hirtius inuented stewes for Lampries in Asia.
Caius Marius first aduanced the Aegle in the Romane enſigne. 273.c
Caius Caligula the Emperour his saying of Surrentine wines. 414.b
Caia Cecilia. Looke Tanaquill.
Calpe, a Promontory. 51.b
Calpe, a mountaine. ibid.e
Calculosa, a kinde of Purples. 259.b
Calydna Island. 316.b
Calamus Aromaticus. 375.a
Calculation of the yeare by Caesar the Author followeth. 586.l.
Calamaries fishes. 244.b
Calaminth first vſed by Lizards. 210.l
Sea-Calfe his qualities. 213.b
Calues chosen for sacrifice. 235.e
Callibriches, a kind of Apes. 225.b
Camalodunum, a towne in Brittaine. 36.k
Cammell hath no fore-teeth in the vpper iaw. 337.b
Cammels how they engender. 302.l
Cammels their diuerse kinds. 205.b
Camelopardalis, what kinde of beasts. 205.d
Campaine in Italy a most fruitfull country. 567.e.f
Canell. See Casia.
Canes. See Reeds.
Canes of India serue betweene ioints, for boats 482.m
Canes of diuerse sorts. 483.b
Canes and reeds how they grow. ibid.a
Canarium what sacrifice. 551.b
Caucamum. 374.b
Canetias, the workemen that made the stature of Diana at Ephesus. 491.c
Canopus the name of a starre, where and in what manner it appeareth, and where not. 34.l
Canopus, a goodly starre seen in Taprobane about the pole Antarticke. 130.i
Canterius in a Vineyard, what it is. 528.i.k
Cantharolethus in Thrace. 327.a. *why so called.* ibid.
Capnummargos, a kinde of red marle. 506.b
Capparis, the plant of the fruit capres. 400.i
Caprification to be practised after raine. 546.b
Caprification what it is. 444.k
Caprifices what it is. ibid.b
Cappadocians how they tooke their names. 116.b
Caprimulgi, what birds. 292.i
Carambis promontory. 49.a
Carbunculus, burning earth. 503.b
Carbunculus in corne, what it is. 598.i
Cardamomum, foure kinds. 365.e
Cardiaca, disease of the heart. 341.a
Cardo, what it is. 598.i
Carpinus, what manner of trees. 466.m
Carginon, what it is. 476.g
Carpheotum. 367.d
Caryota dates, why so called, and the wine thereof. 387.d
Caryopon, what drug. 397.c. *the worth.* ibid.
Carob-tree. 390.g
Carobs or carats, what kinde of fruit, 447.b
Carpentry and the tooles, whose invention. 188.l
Carpophilon. 452.m
Carseoly territory. 537.f
Carthegon, what it is. 476.g
Casia. 372.i
Casia, the sweet spice where it groweth, 373.e *the plant described.* ibid. *Casia the best.* ibid.
Casius a mount of admirable height. 102.g
Caspiæ, gates so called. 122.g
Caspia part not the streights of Caucasus: they be described 455.a.b.
Castor and Pollux star, what is to be thought of them. 18.k *wherefore men invocate them at sea.* ibid.l
Castoreum what it is. 212.m
Cat of gold worshipped as a god. 546.b
Cats how they ingender. 302.l. *Cats how subtill in hunting.* 308.g.
Catacecaumene, a region. 415.f. *why so called.* 416.g
Caligula his eies stiffe in his head. 334.k
Cataractæ. See Diomedian birds.
Cato Censorius commended. 410.d. *his precepts touching Vines.* 411.a
Cato perswaded the Senate of Rome to destroy Carthage, by occasion of a figge. 443.a.b.c
Cato his praise and commendation. 169.f
Catorchites
Catorchites, what kinde of Dates. 421.a
Catoblephas, what kinde of beasts. 206.l
Cati and Cerculi, why so called. 173.b
Cause of vomit. 342.l
Cattuians naturally subiect to the swelling of the Spleene. 331.k.
Cauneas presaged ill fortune to M Crassus. 445.a
Cauchi, a people without trees, their habitation and country described. 455.a.b
Caunitica, a kinde of Snakes. 218.i

C E

Cea Island. 41.a
Cedar gum. 424.g
Cedars, which be best. 489.a
Cedar oyle. ibid.
Cedar for Masts. 490.g
Cedars of dwarfe kinde. 388.l.m
Cedrelate, 389. a. the timber thereof euerlasting. ibid.
Cedrelaon. 434.b.i
Cedrium, what it is. 46.b
Celendine reuealed by Swallowes. 210.l
Celtium, a kinde of Tortoise. 241.e
Celtie. See Lote-tree.
Centigranium wheat. 565.b
Cepphus a beast. 205.e
Cephenes or Serenes, young drone Bees, and how they be fed. 318.i
Ceratias, a kinde of Comet. 15.e
Cervus a Mast-tree. 458.m. *the mast thereof.* ibid.
Cerastes what worme. 492.g. *wormes in figge-trees.* 539.e
Cerastæ serpents. 208.g. *Cerastæ serpents haue hornes of flesh.* 331

C H

Cheapenesse of all victuals in Rome. 551. d. *the cause thereof.* ibid.f
Chalcedon, why called the citie of the blind. 114.g
Chamedaphne. 452.m
Chamecerasti. 448.b
Chameleons lights are very big. 341.a
Chameleons roll their whole eies. 331.f.
Chamelaa. 398.k
Chamaropes, what they be. 387.a
Chamæmyrsine. 434.b
Chani fishes without males. 244.m
Characias, a kinde of yeador cane. 483.e
Charitobleplharon, a shrub within the sea. 402.k
Charcoale of Oke-wood. 459.c
Charcoale of young tree best. ibid.
Charcoale how it is made. 459.d
Charcoale worst, made of the Oke Hatipheos. ibid.
Charme to drine away haile. 547.f
Charmidas his memory. 168.g
Chasma what it is. 17.b
Of Chastitie rare examples. 173.f
Chats or Catkins vpon diuers trees. 459.d
Chaus a beast. 205.e
Chalenophagi hairie all but head. 134.i
Chelidoniæ, Islands in Asia. 368.l
Chelidony, stones in mawes of young birds. 343.b
Chenelopes. See Birganders.
Chenerotes. 281.b
Cheese vnknowne to barbarous nations. 348.k
Cheese of the best sort made in Dalmatia. ibid.l
Cheese excellent at Vatusium. ibid.m
Cheese of diuers sorts. 349.a
of Cheese a discourse. 348.l
a Cherrie tree bearing armes of a mighty bigneſſe. 476.m
Cherrie trees when to be grafted. 523.b
Cherries of a middle kind between berries & grains. 448.g
Cherrie trees brought into Italy. ibid.b. they will not grow in Aegypt. ibid.
Cherries, Apronian, Aitian, Caecilian, Iulian, Duracin, Plinian, of Portugall, Laurean, Macedonian. 448.b
Cherries how they be kept. ibid.i
Cheſtnuts rather no be called Maſt than nuts. 446.d
Cheſtnuts described, ibid. their kernils ground into meale for bread, ibid. how to be eaten. ibid.
Cheſtnuts called Sardinian nuts, and why. ibid. named *Acc Sabaris.* ibid.m
Cheſtnuts, Tarentine, Balanitis. ibid.
Cheſtnuts, Salarian, Corellian, Meteran, Coctiua. 447.a
Cheſtnuts which be beſt. ibid.
Choughs filch mony. 285.c
Chine-bone. 339.e. the vse of it. ibid.
Chin, man onely hath. 337.a
Chickins how they be hatched. 298.l
Children begotten and borne, at what age of the parents. 163.a.b.
Children not alwaies answerable to their parents in euery reſpect. 160.l
Children twelue distinct cast away at one slip from a woman. 160.k
Children of the Dukes carry the marke of their parents to the fourth generation. 161.a *childrē changelings.* 158.b
Children breed their teeth in the seuenth moneth of their age. 164.b
Children aboue three at a birth, is monstrous. 157.d
a Child returned into the mothers wombe. 158.g
Chimæra, a hill in Phoselis, burning both night and day. 47.b.
blacke Choller cause of fury. 341. e. *cast vp by vomit deadly.* ibid.
Choromandæ, what people. 156.b
Chilo his sayings counted Oracles. 173.c. *how he died and was honoured.* ibid.d
Chronicles who first deuiſed. 189.f
Chrysomela, a kinde of Quince. 436.b
Chydæi, certaine Dates. 388.g

C I

Cich-pease and the nature thereof, how to be sowne. 569.f 570.g *sundry kinds of ciches.* 370.g
Cich-peaſe how codded. ibid.
M. T. Cicero the elder his praise. 172.m
M. Cicero the younger challenged for a drunkard. 428.g
Cicercula. 370.g
Cicero his commendation.
Cici. Looke Ricinus.
Cichorie, medicinable to diuerse birds. 272.m
Cilicia, the description thereof. 211.d
Cinnamologus a bird. 104.m
Cinnamon. 288.m
Cinnamon groweth in Aethyopia. 372. i. *exchanged for what commoditie.* 372.k.
Cinnamon plant described. ibid.
Cinna-

The Table to the first Tome

Cinnamon the best. 373.a.b
Cinnamon of two kinds. ibid.b
Cinnamon the price. ibid.
Cinnamon root set into the ground in the temple of Augustus. ibid.c
Cinnamon garland dedicated by Vespasian. 373.d
Cinnamon shrub will not prosper in Syria. 478.l
Circos, a kind of Hawke. 274.k
Circei, Islands (by the retiring of the sea) ioyned to the continent. 39.c
Circeus, the name of a wind. 23.b
Circumference of the world. 49.c
Citron tree. 359.c. the fruit a counterpoison. ibid.
Citron tree fruitfull. 359. d. it liketh not to be in strange countries. ibid.
pome-Citron kernils good against a stinking breath. ibid.e
Citron tree. 395.c
Citron tables. ibid.
Citron tree beareth not but in Assyria. 478.k
Citticke coronets six, given to Manlius Capitolinus. ibid.
Citticke coronets. 456.b. compared with all others. ibid.
Citticke coronets fourteen given to Siccius Dentatus. 454.e
Citticke coronet or garland, where of it was first made. 457.b
lawes appertaining to Citticke coronets. ibid.d
Citticke coronet at Rome comparable to the best among the Greekes. ibid.c

C L

Clamatoria, a bird. 277.c
Clapping of hands reioice Bees. 231.e
of Clawes a discourse. 351.c
Cleopatra her lauish expence. 257.a
Q. Cleopatra her rich pearles. ibid.
Cleostratus found out the signes in the Zodiake. 5.e
Clerus a bitter thing found in hony combes. 318.l
Climatericke yeares. 182.b
Clodding of lands. 579.e
Clodeus the son of Æsope, his expence and riot in pearles. 257. d.
Clogs hanging from Rosin trees all but the Larch. 463.
Cloth of gold when it was inuented. 226.i
Clothes of diuers colours wotten. 228.i
Clouds, their shapes. 29.c
Cloues, a spice. 362.h
Clutina or Clutina, a bird. 277.c
Clupea, a fish, killeth another called Attilus. 243.a

C N

Cneston, Cneros. 398.k

C O

Cocks go about with chickens when the hen is dead. 299.e
Cocks watchfull and desirous of glory, 279.c. Astronomers. ibid. Sentinels. ibid. they loue soner aigunty and win it by fight. ibid.c.d
Cockes dreadfull to the Lion. ibid.e
Cockes of kinde fighters. ibid.
Cockes beare great sway in Auspices. 279.f
Cockes carued and made capons. 280.b
Cocke fighting. ibid.
a Cocke speake. ibid.
Cocolobis. See Vine Basilica.
Coctura, what it was. 412.k
Coelites, who they were. 335.b
Cod-fish. 245.b
Coggygria a tree, the proprieties of it. 399.c
Coine stamped with the image of sheepe, kine, and oxen. 550.l.
Colaria, a sort of cod-fish. 245.e
Colon, a gut so called. 343.a. in it is the paine of the collicke. ibid.
Colostratia, a disease that commeth of Bee-stings. 348.b
Columbinum Cicer. 570.g
Colour of the king of Bees. 318.i
Colours in the eie, why they are. 335.b
Colymbades, what Olines. 432.g
Comagenum, a precious composition. 381
Comata, part of France. 332.i
Comarum, what it is. 447.e
Comets white with silver haires. 15.f. shaggie and like a mane: when such a one appeared, and the continuance of such when they doe appeare. 16.g
Comets what they doe fore-token. ibid.g
Comets neuer lightly seene in the West part of the heauen. 16.b. were worshipped for gods. ibid.i
Combat betweene Buls and Elephants. 195.f
Combat betweene an Elephant and a Roman. ibid.d.e
Commodities in a farme, which be most gainefull. 553.e.f
Commosis, first foundation of Bees worke. 343.g
Conception, at what time. 164.b
signes of Conception. 159. a. of a boy and a girle distinct. ibid.d.
Conception double. 160.l
Conchylium, a shell-fish. 246.i
Conchylia, what fishes. 258.i
Conger, a fish. 246.b
Conservation what it was. 550.i
Connies kinnle euery moneth. 303.d. they admit superfœtation. ibid.
Connies exceeding fruitfull. 232.b. why they be called in Latine Cuniculi. ibid.i
Connies haire employed for cloth. ibid.k
Connies admit superfœtation. ibid.
Connies vndermine a towne. 212.g
Connies with double liuers at Grenada in Spaine. 342.g
Cookes in price. 246.d
Conopas, a dwarfe. 165.c
Connolvulus, a worme that breedeth in a Vine. 547.b
how it is remedied. ibid.
Cophantus, a hill in Bactriana, burning by night. 47.c
Coracinus, the best fish in Ægypt. 246.m
Coracini, fishes. 245. b
Corellines his grassing. 520.l
Cordi, what they be. 226.l
Corsideus his recouery from death. 184.l
Cordylæ fishes, a kinde of Tunies. 243.c
Cordum, what kinde of hey. 596.g
Corke tree. 461.e. the barke thereof. ibid. the vse it is put vnto. ibid.
Cornei, who they be. 166.i
Corneill tree, how it beareth. 473.c. the wood how to be employed. 490.b
Corneill berries preserued. 449.k
Corne offered to the gods in Numa his time. 546.d
Corne parched for sacrifice. ibid.e
Corne sowing, grinding, and kneading who deuised. 187.e
Corne gaue names to families in Rome. 550.b

Corne giuen as a reward to worthy warriorrs. ibid.
Corne cheape at Rome. 551.b
Corne dinided into two generall heads, Fourment and Pulse. 557.c
Corne of all sorts when it commeth after it is sowne. ibid.e
Corne how it beareth head and cariesh seed. 558.g
Corne spiked what leafe it beareth. ibid.m
Corne spiked bloweth at once. 559.a
Corne differing in ripening. ibid.a.b
Corne differing in stalke and eare. ibid.
Corne how to be threshed and cleansed. ibid.b.c
Corne how it differeth in weight. ibid.c.d
bread-Corne doth degenerate into Oats. 574.g
Corne in the field how to be preserued and kept from field-mice. 576.g
Corne how to be sowne respective to the soile. ibid.k
Corne growing vpon trees. 577.b
Corne how to be laid vp for store. 603. a. b. what corne will keepe best. ibid. d. c. how corne may be kept sweet and good long. ibid. e. cutting of corne after diuerse sorts. 602.b
Coroners Murrall. 456.i. Vallare. ibid. Nauale. ibid. Rostrate. ibid.k
Coroners how they came first. 456.l
Coromande, a sauage sort of people. 156.g. without speech. ibid. toothed like dogs. ibid.
Corus wind. 22.l
Coos Island. 323.a
Cosei, wormes bred in okes. 539. c. they be daintie meat. ibid.
Costus a spice. 384.b. the kindes and price thereof. ibid.
Cotinus, what tree. 468.b
Cotton trees. See Gossampine.
Cotton trees in Æthyopia. 395.a

C R

Crab-fishes their nature. 252.k.l
Crab-apples. 438.m
Crab-trees bearing twice a yeare. 474.m
Crabs onely foure-footed among fishes. 351.l
Crœsus his sonnes vntimely speech. 353.e. it was prodigious. ibid.
Cranes how they flie. 281.c
Cranes tamed very plaifull. ibid.f
Cranes a daintie dish. 282.g
Crapula what it is. 464.k
Crapula, what mixture it is, and what effects it worketh. 424.b.
Crassus Agelastus was neuer knowne to laugh all his life time. 166.b
Crassitenium, a kinde of Maple. 466.m
Crater Nymphæi, a hollow burning furnace, and vnfortunate to the Apolloniates. 47.d
Craterus Monoceros, a most excellent Hunter, or Hawker. 294.k.
Creatures that lie hidden in the earth, at times haue no blood at all. 346.b
Creatures are not all hairie that bring forth quicke young. ibid.m.
Creatures none of them haue an odde foot. 351.e
Creatures which onely be round. ibid.
Creatures whole housed, their legs grow not in length. ibid.f
what creatures will not liue nor breed within some countries. 234.g
Creatures hurtfull to strangers and none else. ibid.b
Creatures without blood haue no liuers. 341.d
C. Crispinus Hilarius his traine of children and issue in lineall descent liuing. 162.m
Critobulus healed king Philip his eie. 174. m. his reward. ibid.
Crocodile of the riuer. 337.a. moueth the vpper iaw. ibid.
Crocodiles male and female fit by turnes. 302.b
Crocodiles wilie and industrious. 346.l
Crocodiles their description. 208. m. they haunt both land and water. 209.a
Crocuta, what kinde of beasts and their nature. 206.g
Cromes, a kinde of fish. 245.a
Crotalia, what pearles. 256.g
Crow, a subtill bird. 276.b. shee feedeth her young being fledge. ibid.i
a Crow taught to speake. 294.k

C T

Ctesias of Gnidos. 47.b
Ctesiphon framed Dianaes temple at Ephesus. 175.b

C V

Cuckow reckoned a Hawke. 275.b. his time of appearance ibid. killed by his owne kinde. ibid.
Cuckowes lay in other birds nests, and why. 275.c. they denoure the young birds of their nource. 275.d
young Cuckowes fat and delicate meat. ibid.
Cuckow checketh the idle husband that is behind hand with his worke. 593.b
Cucus, a tree. 399.k
Cuir wine, Melampsithium, Psithium. 416.l
Cuits of sundry sorts. 416.m. 417.a
Culeus, the biggest measure of liquors that was among the Romanes. 606.g
Countries, the varietie and diuerse disposition thereof. 36.m
Curites towne. 40.m.
Curtius, a noble knight of Rome. 443.f
Cuscullium, what it is. 461.a
Cutting of corne after diuerse sorts. 602.b
Cuttle fish. 256.g. their nature. 250.g

C Y

Cybia, quarters of Pesaurides. 243.d
Cyca, certaine Dates. 388.g
Cyclopes, monsters of men. 154.g
Cychramus, what bird. 283.a
Cyneas his merrie scoffe at a Vine that bare hard wines. 405.b. his memorie. 168.g
Cyne trees. 363.f
Cynobatos. 401.d
Cynosura, what kinde of addle egge. 301.e
Cyonoides, water-serpents. 243.b
Cynocephali, a kinde of Apes or Monkies. 232.g
Cypresse tree will not be dunged nor watered. it is worse for good Physicke. 544.e ibid.
Cypresse trees beare ordinarily thrice a yeare. 475.a
Cypresse tree described at large, with the properties thereof. 479.c. consecrated to Pluto, and why. ibid.
Cypresse tree good to make vinets and borders. 479.d
Cypresse woods gainefull to the Lord. ibid.e
Cypresse trees lone the Isle Candy best. ibid.
Cypresse wood faire and shining. 491.d
Cypresse tree Rosin. 424.g

The Table to the first Tombe.

Cyprinum oyle. 376 g. 382 h
Cypros, an Ægiptian tree. 375 f
Cyprus Iland. 48 k. ioined sometimes to Syria. 40 i
the compasse and length thereof. 110 m
Cyrene, the description thereof. 94 k *famous, and why, ibid.*
Cytisus highly commended for feeding sheep and other cattell. 400 l. m. it encreaseth nurses milke. 401. a. b. c
how it is to be planted and ordered. ibid. c

D A

Dabula what they be. 386 g
Dactyli, certaine grapes 405 f. *why so called ibid.*
Daffodill flowreth thrice, and sheweth three seasons of plowing. 592 b
Daphnoides Isocinamon. 374 g
Daphnoides. 453 a
Daphnitis. 452 m
Date trees their sundrie kindes. 384 m. 385 b
Dates how they be imploied. ibid.
Of a date tree and other plants prospering under it, a wonder incredible. 581 d
Date trees described. 385 c. d
Distinguished by sects evidently. ibid. d
Itacke Dawes. See Choughs.
Dates how they are to be set. 385 e
Damanetus turned into a Wolfe. 207 d
Date in Ægypt. 374 l
Dates conceine by the presence of the male. 386 g. h
Date trees corne of slips and branches, as well as of kernils. ibid. i
Date trees spring of their owne leaues. 508 m
Dates guelded. 386 l
Date tree growing in the Capitoll of Rome. 143 e
Dates of 49 sorts. 387 b
Dates Royall. 161 d
Dates of Iurie best. 387 e
Dates of sundry sorts. 388 h
Dates serue to franke Swine. ibid. i
Damascene prunes. ibid. l
Date tree leaues serue for cordage. 470 l. *how to be pulled and ordered.* 470 l
Date trees like not in a strange country. 478 k
Date tree of great antiquitie. 495 e
Dathiathum what it is. 367 d
Daties how they come to be vnequall, and not of certaine length. 13 f
Daylight in the night. 18 g
Daylight vpon earth, the reason thereof. 35 c
Day where it is longest and where shortest. 36. i
continuall day for six moneths. ibid. how daies are obserued. 36 l
Day for six moneths together, where. 84 i
the kindenesse of a Daughter to her mother. 174 b
Daughters of Agrippa deliuered of two tyrants. 160 g
Daphnis a bond slaue how highly praised. 175 e
Dando a Sclauonian, lined fiue hundred yeares. 181 a
Dactyle fishes. 209 f
Daughters of Marcus Curiatius, why they were called Sedigitæ. 349 c
Dancing whose invention. 189 e

D E

Death suddaine. 185 c. d. &c.
De ad suppose dreconer. 184 b
Deale. See Firre.
Deaw when it appeareth. 29 b
signes of Death in sickenesse. 183 e
Dead bodies weigh more than quicke. 156 e
Deafe naturally be dumbe. 306 g
Decumanus lines, what it is. 609 b
Deere, where they haue foure kidnies apeece. 343 d
Decapolis, why so called. 701 e
Defrutum, what it is. 416 l
Delos Iland. 40 g
Delos Iland famous, and why so called. 81 b. *the diuerse names thereof.* 161 d
Demetrius spared to burn Rhodes for the loue of a picture. 175 d
Democritus foreseeing by the stars a dearth of oile, bought vp all aforehand. 598 g. *hee fained two gods, Punishment and Benefit.* 3 d
Democritus in hot weather fore-saw a shoure of raine and foretold it. 610 m
Deuteria what wines. 417 e

D I

Dials, where first inuented. 191 b. *not serving for all places.* 35 d
Dialetea, a kinde of Purples. 29 b
Diantis Murrhe. 369 b
Dianaes temple at Ephesus, foure hundred yeares in building. 491 b. *of what timber it was built.* 161 d *her image of wood.* 491 c. *by what meanes it endured so long.* ibid.
Dianaes temple at Sagunsum. ibid. d
Dibapha, what Purple dies. 260 i
Dianaes temple in Aulis. 491 e
Dia Pasmata, what they be. 383 c
Dicearchus his commission. 31 d
Digestion of meat worse in Summer than in Winter. 355 f
Digestion in sleepe of what effect. 356 g
Diademe first inuented. 187 e
Diuination by beasts who deuised. 189 d
Dinochares, a renowned Architect. 99 b
Diomedian birds described, and why so called. 294 m 295 a. b.
Dibapha, what dies. 260 i
Dioscorias, a famous citie of the Colchians. 117 c. d
by whom founded. ibid. d
Diuinors, or men of a prophetical spirit. 173 d
Dionysius being deposed from his kingdome, the sea-water grew to be fresh. 44 i
Dionysiodorus a Geometrician. 49 c. *and his Epistle found in his sepulchre, and the contents thereof.* ibid.
Diomedes his lake. 94 g
Diomedes his horses. 78 b
Diribitorium. 489 d
Discord betweene beasts. 308 b
Diuersitie of childrens resemblance of their parents. ibid. b
Division of fishes. 247 d
Difference betweene brains and marrow of the bones. 333 a
Difference of eie-sight in men. 334
Diuersitie of mouthes in creatures. 336 l
Diuersitie of teeth in creatures. 337 a

Diseases strange incident to men and women. 182. l. *as strangely cured.* 183. a. *who lined long without disease.* ibid. b.
Diseases of sundry sorts. ibid. c. d
Diseases that haunt trees. 538. m
Distances in planting how to be obserued. 514. l

D O

Docus, shining beames in the skie. 17. b
Dogs louing and faithfull to their masters. 218. l
Dogs restore a king to his crowne againe. 218. m. *their affection to their master.* 219. a
Dogs employed in wars. 218. m. *their rare properties.* 219. c
one Dog ouercommeth a Lion and an Elephant. 220. g. b
Dogs mad. 220. i. *how they be preserued from madnesse.* ib.
a Dog speaketh. 220. k
Dogs come into Hercules temple in the beast-market at Rome. 285. d
Dogs will not liue in the Isle of Sygaros. 141. e
Dog-starre his power. 19 f
Dog-starre powerfull on the sea. 245. c
Dog-starre of great effect and precious. 597. d. *highly honoured, ibid.*
Dolphins their nature. 238. h. i
Dolphin swiftest of all fishes and creatures. 238. m. *swifter than an arrow out of a bow. ibid. sort themselues like man and wife.* 238. i
Dolphins lovingly affect men and musicke. ibid. l. they loue mankind, diuerse examples thereof. 238. m
Dolphins know the name Simo, ib. they helpe fishers to catch fish. 240. i. *they haue a certaine commonwealth.* ibid. l
Dolphins haue no eares. 333. e
Dolphins enemies to Crocodiles. 209. c
Dormice kept tame. 293. b. *they sleepe all winter. ibid. c kinde to their sires. ibid.*
Doricke tune. 14. l
house Doues chast. 290. g. *hen-Doues meeke. ibid. h. the cocks iealous, ibid. kinde to their pigions, ibid. i. how they drinke. ibid.*
flocke-Doues line long. 290. k. *their tune. ibid.*
Doues winke with both their eie-lids. 336. i
house-Doues glorious. 290. m. *taken in their pride by the faulcon.* 291. b. *they loue the Kestrell or Stanell, and wherefore. ibid. doues employed as posts and curriers betweene. ib. c. how they be kept to their owne doue-cote. ibid. doues and pigeons of great price.* 291. d
Dones how often they sit and lay in a yeare. 298. i. *house-doues hatch a cocke and a hen pigeon.* 300. k. *hen-doues tread one another for want of a cocke. ibid. l*
Donax, a kind of reed. 485. c. k
Dough how it is made. 560

D R

Sea-Dragon. 249. d
Dragons in vines what they be. 536. b
Dragons fight with elephants, and their subtiltie. 198. k *where they breed.* 199. c. *Dragons procure appetite to meat with the iuice of wild lettuce.* 271. a
some men neuer Dreame. 309. c
diuination by Dreames who first practised. 189. d
Dreames common to all creatures that bring forth their young quicke. ibid.
Drepanis the sea-swallow seldome seen. 351. d
Drinke may be forborne altogether. 166. g

Drupa, what olives. 379. b 30. g
Drypeta what olives. 430. g
Dryos hyphear. 496. k
Dryide in France. 497. b. *why so called, ibid. Dryida their ceremonies in gathering of oke mistletoe. ibid. c*
against drunkennesse and Drunkards. 426. i
M. Antonius a Drunkard, and maintainer of Drunkennesse. 428. g
the behauiour of Drunkards. 427. a
Parthians great Drinkers of wine. ibid. d
Dromiscoi Iland. 40. k

D V

Dung of blackebirds for what it is good. 507. c
Dunging of land, when and in what order. 582. l
Dunghill cockes best adorned on the heads. 331. b
Dung how it is to be raked. 582. l
Dunging of grounds inuented by King Augeas. 507. b
Duracina, certaine grapes 405. e
Duracina peaches. 436. k. *why so called. ibid.*

D W

Dwarfes in both sexes. 165. c
Dwarfes there be in all kinde of creatures. 352. g

D Y

Dying wooll who deuised. 188. i
Dyals by whom deuised. 191. b
water Dyals or Clepsidres whose invention. 191. d

E A

Eale what kinde of beast it is. 206. b
Eares tokens of courage. 333. d
Earth, what portion thereof is habitable. 33. c. *how it appeareth that the earth is in the mids of the world.* 34. b
Earth in the middest thereof an wholesome mixture from both sides. 37. b
Earthquakes the reason thereof. 37. c. *when they commonly happen.* 38. b. *signes of earthquakes comming. ibid. remedies against it. ib. strange and monstrous earthquakes.* 39. a. *wonders of earthquakes. ibid.*
Earth hath deuoured herselfe, and what lands haue swallowed vp themselues. 40. m. *parts of the earth that euer tremble and shake.* 41. e
the measure of the earth in length and breadth. 48. k
Earth element. 2. l
Earth lowest and in the midst: earth hangeth by the poles of the heauens. 2. m
Earth perfect all other elements. 3. a. *earth vnmoueable. ib.*
Earth lesse than the Sun. 8. i
Earth no place therof inhabited which lieth vnder the Zodiacke. 11. b
Earth defended by an apologie of the author. 548. i. k
Earth scorneth and repineth to be tilled by slaues. 552. b
Earth engraued in Achilles his armour. 504. l
Earth how it is subiect to old age. 504. k
Earth, the nature thereof requisite to be knowne. 515. b
Earth desireth the act of generation. 523. a
Ease is the deliuerance of a man child. 159. a

E B

Ebene, a tree of India. 360. g. *the wood paid as tribute. ibid.*
Ebene of two kindes. 360. h
Ebene a tree shewed in a triumph. ibid.

Ebene wood maketh a ſweet perfume. ibid.
Ebrus riuer. 503.d

E C

Echete, a kinde of graſſhoppers. 325.e
Echinometra, fiſhes. 253.b
Echineis a fiſh. 248.m. it ſtaieth the flux of women. ib.a
Echini, vrchins of the ſea. 253.a
Echo, and the reaſon thereof. 21.d
Eclipſe of the Sun and Moone. 7.d. why they are not eclipſed at ſet times. ibid.
Eclipſe, who were the firſt findes out thereof. 8.l
Eclipſes much feared, and of whom. 9.a
Eclipſes of the Moone thought to be by enchantment, and to be helped by diſſonant ringing of baſons. ibid.
Eclipſes, in what time they haue their returne to the former points. 9.g
Eclipſe of the Sun when it happeneth. 9.g
Eclipſe of the Moone alwaies in the full. ibid.
Eclipſes how often, in what ſpace, and the firſt finder out thereof. 9.d
Eclipſe longer than ordinary when Ceſar Dictatour was murdred. 17.e

E G

Egs diuerſe in colour. 298.g
Egs of birds of two colours within the ſhell. ibid.
Egs of fiſhes of one colour. ibid.
Egs of birds, ſerpents, and fiſhes, how they differ. ibid.
Egs beſt for an hen to ſit vpon. 299.a
Egs hatched without a bird. 299.c. onely by a kind heat. ib.
Egs how they be marred vnder an hen. 299.b
wind-Egs called Hypenemia. 300.l. how they be engendred. 301.e. wind-Egs Zephyria. ibid.
Egs drawne through a ring. ibid.
Egs how they be beſt kept. ibid.
Egnat. Mecennius killed his wife for drinking wine. 418.k
of Eye plucking out, vomit followeth. 334.d

E L

Elaterium what it is. 369.a
Elate. 379.e
Electrum a kinde of meſſall. 260.l
Elements three, Water, Aire, and Fire, haue neither ſauour nor taſte. 449.b
Elenchi, what pearles. 255.f
Elæomeli, what it is. 435.a
Elephants cure themſelues by the wild oliue. 211.c
Elephants bring forth but one at once. 303.d
Elephants tooth. See Tuorie.
Elephants haue broad tongues. 339.a
Elephants haue foure bellies or paunches. 343.b
Elephants moſt induſtrious and wittie. 346.l
how they bend their hams. 350.g
Elephants capacitie, vertue, religion, deſire of glory. 192.i
The biggeſt of land beaſts. ibid. *they adore the new Moone. 192.k ſubiect to ſickeneſſe. 197.f. their docilitie. 192.l. 193.b. they plough the ground, ibid. they draw in a chariot. ibid. their manner of dauncing, ibid. their feats of actiuitie and nimbleneſſe. 193.a. an Elephant goeth vp and downe ropes. 193.b. writing Greeke characters. ibid. embarked and their manner of landing. 192.c. their armes called hornes or teeth. ibid. they hide their teeth.* ibid.
Elephants yeeres how they be knowne. 193.d. how they order their teeth. ibid. what vſe they make of them. ibid.
they know wherefore they are hunted. 193.e. their clemencie to man. 193.f. their feare of mans footing. 194.g
Elephant how he vttereth his voice. 353.e. their manner of march. 194.i. their paſſage ouer riuers. ibid.
Elephants baſhfull and ſhamefull. ibid.k.l
Elephants two of K. Antiochus. ibid.
Elephants, their time of generation. 194.l. their affection in loue. 194.l.m. 195.a. both to their owne and alſo to mankind. ibid. their memorie. 195.a. their iuſtice. ibid. when they were firſt ſeene in Italy. 196.b. baited in the cirque of Rome. 195.c
Elephants fight in the cirque of Rome. ibid.c
an Elephant of wonderfull courage. 196.g. their induſtrie. ibid. moone people to pittie. ibid.h. Elephants fight. ibid.i.k
Elephants gentle to weaker beaſts. ibid.k
Elephants harmleſſe, vnprouoked. ib. their maner of fight. ibid. how they be tamed. ib.l.197.d
Elephants how they be taken. 196.l.197.a.b
Elephants mad in time of rut. 197.c. how they ſerue in warre. ibid.d
Elephants affrighted at the grunting of ſwine. ibid.
Elephants how long they goe with young. 197.e.
Elephants in India bigger than African. 197.e.198.k
they loue waters. 191.i. can abide no cold. ibid. their food. 198.g. their trunke and the vſe thereof. ibid. they cannot abide a mouſe. ibid. they take harme by ſwallowing a horſe-leech. ib.b. their skin. ib. it ſerueth to kill fires. ibid.
Elephants teeth of great price. ib. and the vſe of them. ibid.
Elephants trunke vſed for meat. 198.i. where they breed. ib.k. their policie, and the reaſon thereof in nature. 199.a
Elder tree good for pipes. 485.e. the berries for what vſe. 486.g. their ſtakes beſt to prop vines. 526.g
Elegia. 483.g
Elme ſeed when to be gathered. 512.g. how to be ſowne. ib.
Elmes of diuerſe kindes. 467.e.f
Elme Atinia not good for vines. 535.a
Elmes husbands to vines. 512.b
Elops, a fiſh. 245.e
Elpis taketh a bone from betweene a Lions teeth. 203.d
Elleborine. 398.i. the leaues medicinable. ibid.

E M

Emperour Nero drawne by monſtrous beaſts. 352.a
Embrodered workes, whoſe deuiſe. 228.e
Emerita, a place in Portugall. 261.b
Emplaſtration, what manner of grafting. 519.d.e

E N

Endimion, when that fable firſt ſprang vp of being in loue with the Moone. 7.a
what beaſts engender backeward. 302.k
Engines of battery whoſe inuention. 189.b.c
Engliſh oyſters beſt of all others. 267.a
Enhamon, a ſouereigne ſalue. 370.l
Enuious perſons are venomous. 548.m

E O

Eone a tree, 399.b

E P

Ephemerides, who firſt deuiſed. 188.g
Epirus deſcription. 72.k
Epimenides his ſleepe. 184.i
Epheſus a famous citie of Aſia. 109.b
Epileſie, whence it is. Epileſie, 335.a
Epigloſſis, a little tongue at the root of the other. 339.b it is in no creature that layeth egs. ibid. vſe of it. ibid. it is two fold. ibid.
Epidaurus, what it is. 585.d
Epipactis. 398.i. the leaues medicinable. ibid.
Epheſus, ſometime it was ſo neere the ſea that it did beat vpon the temple of Diana. 39.e
Epopes hill. 40.h
Epidamnus Iſland. 40.k

E R

Eratoſthenes meaſtered the globe of the earth, by what light and direction. 44.g
Eratoſthenes a moſt cunning clearke. 49.b.36.h
Eratoſthenes a writer his great praiſe. 49.b
Erithace, Sandaracha Cerinthus, food of bees. 313.b
Erithace effected of ſpring dew. ibid.
Erithace. See Robin-redbreſt.
Ericæum, a kinde of wild hony. 317.d
Ernile not chargeable in ſowing. 572.i
Exuile medicinable by the teſtimony of Auguſtus Ceſar. 572.k. when to be ſowne. ibid.
Errour in numbring of yeares. 181.a
Eryſimum, what kinde of corne. 565.b
Erythini, fiſhes altogether female. 244.m
Erythræa, myrrhe. 369.d
Eryſiceptron. See Aſpalathus.
Erythrocoma, Pomegraunts. 398.g.b

E S

Eſculetum, a groue neere Rome. 462.g
Eſculus the maſt thereof. 458.m
Eſculus runneth as deep into the ground as it riſeth aboue the ground. 477.c
Eſſenij, people throughout the world moſt wonderfull. 101.d carnall loſt they know not. ibid. keepe company onely with date trees. ibid. continued many thouſand yeares without generation. ibid.

E T

Eteſie, the name of winds. 23.d
Eteſie winds. 97.f.473.b

E V

Eumecos. 376.l
Euonimus, a tree. 399.b
Euros as riuer flowing ouer Peneus riuer like oile, not mingled therewith. 76.l
Europe the meaſure thereof. 89.d
Euphorbia hearbe the wonderfull vertue thereof. 92.i
Euphrates a famous riuer, the deſcription thereof. 103.d
Euptelon. 453.a
Europe not the third part of the earth. 1.a. but the one halfe. ibid.
Euthariſtos. 376.l
Eutyche, a woman of Tralleis deliuered in her life time of thirtie births. 157.c. carried to her funerall by twentie of her children. ibid.
Euthimines his ſonnes growth. 165.e
Euthimus a wreſtler honored as a god. 180.k

E X

Exaceetus what fiſh. 247.b.488.i
Experience beſt proofe. 502.k
Excrements of mans body beſt dung for ground. 507.c
Exaluminat piarles of commendation. 255.f

E Y

Eyebrowes of man like the eaues of a houſe. 333.d
Eyebrowes the ſeats of pride. ibid.e
what liuing creatures haue no Eies. 333.f
one Eye in ſome Herons. 334.g
Eyes of ſundry colours. 334.g.b.i
ballor apple of the Eye different from the other parts. ibid.k
Eyes, ſhew the affection and diſpoſition of the mind. 334.k.l
membranes of the Eye. 335.a.b
opticke nerues of the Eyes whether they reach to the braine or ſtomacke. ibid.d
Eyes why they be cloſed ceremonioſly in the dead. ibid.
Eyes yeeld forth teares. 334.k
Eyes, ſometime why they ſee not and be well. 335.a
Eye ſight how it is placed. ibid.b
Eyelids, their vſe. 336.g. why they ſhed their haire. ibid.b
Exployth of a wolfe on the right ſide worketh wonders. 337.f
of Eye-ſight quicke, wonderfull examples. 167.b

F A

Fabaria. 569.a
Fabaria certaine Iſlands. 596.d
Face proper onely to mankinde. 333.d
Factus what it is. 433.d
Fall of leafe a good rule for husbandmen to direct them in ſeedneſſe. 588.i
Falcon helpeth the owle in ſight. 277.f
Fallowing each other yeare. 481.b
Fagutalis, Iupiter at Rome. 461.f
Farrago. 572.b
Farrage corne or dredge. 573.a
Farina, whereof it is deriued. 564.g
Fabius a Senatour of Rome ſtrangled with a haire. 159.a
Fauonius the Weſterne wind, why ſo called. 473.d. why called Chelidonius. 23.c. why named Orinthius. ibid. highly commended. 569.a
Fairies ſeen oftentimes in the deſarts of Affricke. 157.c. they vaniſh away like illuſions. ibid.

F E

Feaſt Fornacalia inſtituted by Numa. 542.e
Fecatum what it is. 417.f
L. Sylla called Felix, yet vnhappy. 177.e
Felicitie diuerſly vnderſtood. 276.b
Feeling a ſenſe common to all creatures. 306.e
Females may certainly turne to be males. 158.b
Females haue ſmaller voices than males, except kine. 353.e
Female firrs taller than the male. 563.b.c
Fenigreeke to be ſowne negligently. 552.b
Ferrets naturally hunt conies. 232.b
Ferula, two kindes. 399.d. root of Ferula dangerous. 399.f
Ferula maketh excellent fine matches. 400.b
a Ferme houſe how to be purchaſed and choſen. 553.b.c.d
Ferne or brake how to be killed. 556.m
Feſane baſtards. 288.c
Feſants of Colchis daintie birds. 296.g
Feſane will die of lyce. 329.d
Fever, a chappell dedicated to her. 3.e

F I

Figtree beare fruit contrary to other trees, and why. 474.k
Figtrees beare twice a yeare: wild figtrees beare thrice a yeare. ibid.d

The Table to the first Tome

Figtree milke or sap serueth for vendles. 486.g
Figs Libian. 442.i. *Pompeian.* ibid. *Figs marsica.* ibid.
Shackled figs. ibid. *Herculanian.* 442.i. *Albicerate.* ibid.
Aretian. ibid. *Porphyrite.* 442.k. *Popular.* ibid. *Chetidonian.* ibid.
Figs both early and lateward. 442.k. *Figs Duracina.* ibid.
Chalcidian figs beare three times in one yeare. ibid. *Teventine figs called Oine or Oenades.* ibid.
Figs as big as peares. 442.g
Figs of Ida described. ibid.
Figtree Alexandrina. ib. *Figtrees of Hyrcania.* 442.b
Figs: Chalcidian. 442.h. *Chian.* ib. *Lydian.* ib. *Mamillane* ot teat *figs.* ib. *Callistruthian.* ib. *African.* 442.i. *Alexandrine or delicat.* ib. *Rhodian.* ib. *Tyburtine.* ibid.
Figdates when to be planted. 442.l
Figs African, Saguntine, Tellian. ibid.
winter figs. ibid.
Figs fall from the tree, if it thunder at the feast Vulcanalia. 546.k
Figs of Mæsia ripen when other blossome, by what deuise. 442.m.
a Fig the occasion of Carthage ouerthrow. 443.b.g
Figtree Nania in Rome. 443.d
Figtrees Rumnalis. ibid.
Figtree in the Forum at Rome. ibid.
Figtree before the temple of Saturne in Rome. 443.l
Figs ripen altogether on the tree. 444.b
wild Figtrees. ibid.
Figs ripen the sooner by the meanes of wild figtrees. ib.h.i.k
Figs of the Isle Ebusus the best. 444.l
Figs how they be put vp and kept. ibid.
Figs good vill malt. ibid.m
Figs: Coctane, Carica, Caunia. ibid.
Figtree made fruitfull by the sea onion Squilla. 514.g. *it is drier in the mids than at the head.* 517.c
Figtree how it is made to beare olives. 524.g
Figtree of all other ageth the soonest. 526.m
Figtree groweth best by the water side. 544.i
Figs how they are ripened by caprification. 545.c
Figs how they be made smooth and pleasant. 547.b
a Figtree of India. 560.k. *the description thereof.* ibid. *it setteth it selfe.* ibid.
Ægiptian figtree. See Sycamore.
Syrian figtree. 389.e.f
Fields in Æthiopia about the hill Hesperis shine and glitter like starres. 47.d
Filberds called Abellinæ, whereupon. 446.b
Filberds: Calue, Praenestine, Thasian, Albensian, Tarentine, Mollusce. ibid.i
Fines passed vnder the name of sheep & oxe at Rome. 550.k
Firrs taller than any rosin tree. 465
Firrs topped die, topped line. 476.i
Firrtrees how employed and how to be chosen. 488.i.m
Firre masts for shipping. 489.f
Firre is good for plankes. 547.a
Firre how it will not putrifie in water. 492.i
Firre wood highly commended in carpentry and joyners worke. 493.a.b
Fire bird. Looke Incendiaria.
Fire in the hill Chimera flamed with water and quenched with earth. 47.c
Fire the marnailes thereof. 46.m
Firie glasses opposite to the sun-beames sooner inflame than fire. 47.f
Fire the highest element. 2.d
Fires about the body of men. 48.b
Firmament seen to chinke and open. 17.g
Fishes feed on land. 235.e. *diuided according to their sundry shapes.* 247.d
Fishes of all sorts breath after a manner. 237.c
Fishes both heare and sleepe. ib.& 306.b. 309.b
Fishes changing colour. 249.d
Fishes which be bloudlesse. 249.c
Fishes esteemed diuersly in sundry places. 246.m
Fishes are not all alike couered. 242.b
Fishes some mislike in cold, others in heat. 245.b
a Fish leapeth out of the water at Cæsars feet. 244.l
Fishes how and where they like and liue best. 245.a
Fishes, of what kinde they be all spawners & no milters. ib.
Fishes haue sense. 261.d
Fishes, of all creatures haue the big gest heads. 332.g
Fishes their eies shine by night. 335.c
Fishing time which is best. 244.m
Fishes that be soft haue no bones. 345.a
Fishes female commonly bigger than male. 244.l
Fishes doe smell. 306.b
Fishes presage things to come. 244.l
Fisticke nuts, and their nature. 388.l

F L

the Flap Epiglottis. 339.c
Flies drowned will reuine kept in ashes. 330.l
Fleas engendred of dust. 329.a
Flies enter not into Hercules temple in the beast-markes at Rome. 285.d
Flies breed in the fire at Cyprus. 330.i
Floure for threshing how to be tempered. 602.d
Floralia a festiuall holiday. 600.g
Flacci why so called. 333.b
Flockeworkes. 277.e

F O

Forehead sheweth the nature of man or woman. 333.e
Food of sundry creatures. 307.d
Foules distinguished generally by their feet. 276.g
Foules why they pecke at the eies of a man. 335.c
Fortune a goddesse, her vniuersall power. 4.k. *her mutabilitie.* 177.a. *variable fortunes of diuerse persons.* 177.b *to bad. Fortune a temple.* 3.c
Foules that haue crooked talons be long legged. 351.d
Foliatum ointment. 382.k
Fountaines of wonderfull and strange natures. 45.a.b
Fountaine from vnder the sea yeelding fresh water. 110.l
Forrests in Germany. 455.c
Foxes very quicke of hearing. 222.g. *how they engender.* 302.m. *sea-Foxes.* 262.g
strange Foules in the Island Area. 120.l

F R

France not subiect to earthquakes, and why. 38.b
Fraud of Toranius a merchant slaue-seller. 162.g
Frogs force inhabitants to abandon a citie. 212.b
213.a
Frogs Rubetæ. 213.a
Frogs how they make their noise. 338.l
Frankincense male what it is. 367.d
Frankincense best how it is knowne. 368.i
Frument what it is, and of how many kindes. 557.c.d
Frankin-

Frankincense onely in Arabia. 366.g
Frankincense tree described. ibid.k
Frankincense gathered. 367.a. *the manner thereof.* ibid.b
Frankincense paieth much toll. 368.b. *high price of Rome.* ibid.i.
Frize mantles. 227.f
Fronditius passed ouer the riuer Vulturnus in spight of Annibal. 499.c
Frost how it is engendred. 29.b
Fruits how to be preserued. 440.m. 441.a.b
Fruits grow after diuerse sorts. 450.g.h. *in what regard they be set by.* ibid.i
Frument or spike-corne. 582.b
Frumentie corne. 559.d
Frumentie bastard. 568.i

F V

Fullers craft who found out. 188.i
C. Furius Cresinus a notable good husbandman, accused and acquit. 556.g.b
Furlong how many paces. 14.l
Furnaceus pavis, what it was. 566.m
Furrowes direct. 579.e
Furrowes ouerthwart. ibid.l
Fusius Salinus his strength. 166.l.m
Fusterna in trees what it is. 488.f

F Y

Fyre striking out of a flint, who deuised. 188.m

G A

Gabalium. 314.b
Gabara. 165.b
Gades. 48.i
Gagates. See Aetites.
Gall in serpents is their venome. 337.c
Gall hangs at the liuer. 341.c. *it is not in all creatures.* ib.
Gall of a Deere where it lieth. 341.d
Gall infecteth the body with the yellow iaundise. ibid.e
Gall of seals good for many purposes. 342.g
Galbanum a gum. 518.i. *the best how it is knowne.* ibid. *the vertue and the price.* ibid.
Galguli what birds, and how they build. 288.l
Gallia the description thereof. 87.a
Gall-nuts of the oke Hemeris best for curriours. 460.g
Gall-nuts appropriate to mast trees. ibid.
Gall-nuts, which be best. ibid.
Gall-nuts breake forth all in a night. ibid.
Gamale, a territory in Phœnicia. 40.m
Games publique who first ordained. 189.f
Games solemne: Olympia, Isthmia, Pythia, Nemea. 457.a
Ganders and geese how they do engender. 301.b
Ganges the description thereof. 126.b
Ganges a riuer. 48.k. 156.i
Ganza what geese. 281.a

G E

Geese bashfull and modest. 279.a
wild-Geese in what manner they flie. 282.k
Geese watchfull. 280.i. *saued the Capitoll.* ibid. *prouided for with the first state of Rome.* ibid.
Geese giuen to loue mankind. 280.k
Geese seeme to haue vnderstanding. ibid.
Geese liuer is excellent meat as is it ordered. 280.i. *who deuised the same dish.* ibid.
Geese trauailed afoot from Terwin and Turney in France to Rome. 280.m. *their feathers and downe.* ibid.a
Geese how they sit and hatch. 301.b.
Geirs exceed vs in smelling. 305.f
Geirs where they build, and how they breed. 274.g
Geometrition who was excellent. 175.a
Generation of mankinde, the reason thereof. 162.i.k
Gesi clithron a famous cane. 154.k

G H

Ghost of Arcteus in forme of a rauen. 184.i
Ghost abandoning the body at times. ibid.b

G I

Giants in times past. 165.a.b
Giddinesse in the braine ten daies after the women hath had company with the man, sheweth conception. 159.a
Gilthead a fish. 245.b
Ginney or Turkie hens. 296.g

G L

Glandules or kernels in swine. 339.b
Glanis a fish, her nature. 262.g
Glauce loued of a goose. 280.k
Glaucus a sea-fish. 245.b
Gledes. See Kites.
Glew made of an oxe hide sodden. 347.c. *what woods will not be glewed.* 493.c. *the best glew is made of bulls hides.* 347.c.
Glo-birds or Glo-wormes, what they betoken. 593.c
Glottis what bird. 283.a
Glo-wormes, why they be called Lamprides. 326.l *when they first appeare.* ibid.
Glynon a kinde of Maple. 466.l

G N

Gnats. 310.l
Gnat hath all the fiue senses. ibid. *is thirstie of mans blond.* ibid.
Gnat-snappers what kinde of birds. 286.m. *when they be called Ficedulæ.* 287.a. *when they be called Melancoryphi.* ibid.
Gnesios the royall Ægle. 272.g
Gnomon, what. 35.e

G O

God, what he is. 3.d
Gods thought to be many, and how this foolish opinion first sprang. 3.d. *To assigne any forme to God is mans weakenesse.* 3.i. *Plagues accounted as Gods.* ibid.
Gods more in heauen, than men in earth, if they should be so many as men do feigne. 3.e
men haue accounted beasts, and other filthy things to bee Gods. 3.e
Gods that they be married, vaine it were to beleeue. 3.e
God feigned yong and old, winged and lame. 3.f
Gods, in them are feigned adulteries, hatred, and wars. ib.
Gods worne vpon fingers in rings. 4.b
Gods cannot do all things, as to die. 5.a
Gods not innumerable. 3.d
Gods, Democritus maketh two onely. ibid.
a God canonized here vpon earth. 180.i
Gold, what people hath it. 138.b
Gold mines who discouered. 188.k
Gold melting, trying, and fining, whose deuise. ibid.

Goats, their manner of breeding. 229.a. both male and female, ibid. how they helpe their eie-sight. 229.b. their wit. ibid. male goats which be best. ibid. female goats how to be chosen. ibid.

Goats ouer in an ague. 229.d. their haire in stead of woll vsed in cloath. ibid. they barke and kill trees. ibid.e. the goats beard. ibid. how they breath. 229.d. they see by night. ibid. they kill olive trees by licking them onely. ibid.e. 231.c

Goats wilde of sundry kinds. 229.e

Goats not sacrificed to Minerua. 301.b, greedie feeding the bane of goslings. ibid.

Goslings stung with a nettle die vpon it. 363.e.f

Gossampine trees bearing cotton. 334.b

Goggle eies dim-sighted. 334.b

G R

Gray eies in the darke see better than others. 334.b

Graues how they escape the hunter. 218.g

Graines in fruit different. 447.e

Graine. See corne.

Graine of three sorts esteemed by the Greekes: Dracontias, Strangeas, Selinusium. 360.g 517.a

Grafting how it is. ibid.g

Grafts ought to be taken from the top of the tree. ibid.

Grafts how to be taken from boughes that beare well. ibid. how they are to be set. ib. how they are to be thwighted. ibid. not to be sharpened in the wind. 518.b. they are to be set before the moone is in the full. ibid.

Grafting in scutcheon. 519.e.f. 520.g.h. Rules to be obserued in grafting. 521.c

Grafts of cherrie trees how to be vsed. 518.d

Grafts of vines how to be vsed. 519.b

Grafts of wild trees will not grow in the tame. 519.e

Grafts of wild trees will not grow in the tame. 520.k

Grafting more plentifull than sowing of seeds. 522.g

Grafts of olives when they are to be set in dry places. 522.g

Grafts of olives how they are to be vsed in Barbary. ibid.b

Grammarian, who excellent. 174.l

Grapes how they are preserued from pullain. 420.k

Grapes that loose the belly. 423.a. grapes that bind the belly. ibid.

Grapes Echoledes, why so called. ibid.

Grapes de-guard. 440.i

Grapes bunches how to be gathered for guard. ibid.m

Grapes of diuerse sorts. 45.e

Grapes how preserued. 406.g

Grapes dried in furnaces. ib. grapes sodden in wine must. ib.

Grapes hanging all winter on the vine till new come. 406.b

Grapes hanging all winter on the vine till new come. 407.c

Greeke grapes of Corinth. 408.g

Grapes Uariana, and why so called. ibid.i

Grapes Inerticulæ might be called the sober grapes. ibid.i 409.d

Grapes of the free towne Pompeij. ibid.

Grapes Tiburtine. ibid.

oline Grapes. ibid.

Grapes Vinaciole. 409.k

Grapes Capciades. ibid.

Grapes Buccomatis. ibid.

Grapes Tarrupiæ. ibid.

Grapes Phœnie. ibid.

Grapes Prusinie. ibid.

Grapes streptos. ibid.

Grapes Thasie. ibid.

Grapes Mariotides. ibid. grapes Lagea. ibid.

Grapes Bimamme. 410.g

Grapes of Spaine. ibid.b

Grapes Escaria. ibid.

Grapes Rumastis. ib. Ounce grapes. 410.b

Grapes Ægiptian. ibid.

Grapes Rhodian. ibid.

Marker grapes. ibid.

Grapes Cinerea. ibid.

Grapes Scirpula. 416.m

Grapes Ægiptian, Thasia, Ætnalos, Peuce. 415.f

Grashoppers how they liue. 325.d. their sundry kindes. ibid.d.e. they be dim-sighted. 326.g. they may be reduced into three kindes. ibid. they be meat to some nations. ibid. when they die. ibid. they be not euery where. ibid. they haue wings onely without mouth. ib. f. where they be mute. ibid.

of Greece. 344.k

Greekes full of lies and vanities. 207.d

Grissons defend golden mines. 154.b. what birds. 296.k

Grind-stones and whet-stones for sithes. 595.c

Grisles broken will not close together. 345.b. more of grisles. ibid.

Grounds ouergrowne with bushes how to be cleansed. 505.b

Ground how to be trenched. 559.a.b

to chuse ground, rules infallible. 505.b

Grounds which are principall. 504.k

Ground must be bettered by sowing some graine in it. 508.b

Ground burned by cich-pease. ibid.

the Growth of man or woman. 345.b

G V

Guarlands giuen to victors in the foure great games. 457.a

a Guild instituted by Romulus ouer corn fields seege. 549.c

Guarlands of corne-eares first knowne at Rome. ibid.

Guelded apples. 438.l

Gueldings cast not their teeth. 338.b

Sea-gull, where they breed. 287.f

Gums of diuers sorts. 391.e.d

Gum Arabicke. 424.g

Gum of Iurie. ibid.

Gum Colophonian. ibid.

Gum Spagas. ibid.

Gum Cypryan. ibid.

Gut Longaon how it maketh creatures insatiable. 343.b

of the Guts. 342.k.l.m. 343.a.b

G Y

Gymnosophystes, certaine Philosophers of India. 155.a

they can looke against the Sun. ibid.

Gymnetes, people liuing aboue a hundred yeares. 147.a

Gynaocratumeni, people why so called. 118.b

H A

Habrosharon. 364.k

Hadrobolon what it is. 363.a

Haddocke, a kinde of cod-fish. 243.e

Haile how it is engendred. 29.b

Halcyones the name of bird: their hatching. 287.e 8.l

Haliattes. 242.b.

Haliaetos, what kinde of egle. 272.g. shee traineth her young ones to looke against the Sun. ibid.i

Halfe our time spent in sleepe. 183.a

Halcian daies. 287.d

Halciones of diuerse kinds. ibid.

Halciones when they breed. ibid.

Halisphæos, a kinde of Oke. 450.d. unfortunate. ibid.

Hammoniacum. See Ammoniacum.

Hanno banished for taming a Lion. 203.b

Hanno his booke and commission to suruey the compasse of Affricke. 91.b

Hanno his nauigation. 33.a

Hangings of exceeding great price. 228.k

Happie is no man in this life. 176.b

who was deemed most happie by the Oracle. 180.b

Hares admit superfœtation. 303.d

Harpe starre Fiducula. 588.g

Harrowing how it is performed. 579.f

Hawes sleepe open eied. 335.a

Hard and stiffe harted folkes are accounted brutish. 340.i

Hardishrews if they goe ouer a cart-tract, freight die. 244.g

Hares in some places haue two liuers. 341.c

being then transported they lose one of them. ibid.

Hare will neuer be fat. 344.k

Hares admit superfœtation or double conception. 232.k

Hare the hairiest creature. 347.a

Hares how their age is knowne. 232.a. both male and female. ibid.

the sea-hare a venomous fish. 191.b. 264.i

Hares very fruitfull. 232.k

Hares haue very good to make cloth. ibid.

Harmonie of Planets. 14.k

Harts shewed the vse of the hearbe Dictamnus. 210.k

cure themselues with crabfishes. ibid.

Harts and Hinds are cured by the Artichoke. 211.c

Harts. See Stags. 214.g.h

Hastie apples. See Apples Mustea.

Hasell nuts. See Filberds.

Haulme. See Straw.

Hawkes. 272.f. their kinds. 274.k. where they breed on the ground. ibid.l

Hawkes and men catch birds together, 274.m

and part the prey equally. ibid.

of Haire. 332.i.k

Haires and stones engender in mens bladders. 344.g

Haires out of a thicke skin are grosse and hard. 347.a

they grow long vpon Horses and Lions. ibid.

swallowing downe of an Haire the death of Fabius a Roman Senatour. 159.e

Haires of Connies long on their cheekes. ibid.

Hairie men more lecherous than others. ibid.

Haires come not sometime without the helpe of art. 347.b

Haire of the head in men groweth most. ib. it groweth not at the cut end but from the root. ibid.

Haire groweth vpon dead bodies. 347.b

Hairie beasts, except the Asse and the sheepe, are troubled with lice. 329.b

Haire white. 232.b

H E

Heads adorned with crests, tufts, and combes. 331.a

Heads cut from the bodie licked vp their owne bloud. 242.b.

Heart in man and beast how it is situate and made: also to what vse it serueth. 340.g.b

Heart of fishes pointeth vp to the mouth. ibid.

Heart first formed in the mothers wombe. 340.a. it dieth last. ibid.b. it panteth like a liuing creature by it selfe. ibid.b. the treasure of life. ibid. the seat of the mind and soule. 340.b

Heart cannot abide paine. it id. paine of it bringeth present death. ibid.

Hearts, they that haue little, are valiant. ibid.

Heart of a man how much it groweth yearely. 340.f. how long it groweth. ibid. when and how much it decreaseth. ibid.

Hearts of some men all hairie. 340.i

Hearts, hairie shew strange and valorous men. ibid.

Heauen full of pourtraits. 2.g

Heauen and World all one. 1.c

Heauen in the motion thereof an harmonie. 2.b

Heauen called Cœlum, and why. ibid.

Heauen diuided into sixteene parts by the Tuscanes. 7.a

See more in World.

Hebre riuer. 53.b

Hecuba her tombe and name thereof. 79.a

Hedgehogs how they engender. 362.l

Hedysmata. 381.d

Helix of three sorts. 481.a

Helix, a kinde of Yue. 480.k

Hellenes, whence they tooke their name. 76.b

the three names Homer gaue vnto them. ibid.

Helena, a Meteor so called. 18.l

Heliotropium turning alwaies with the Sunne. 20.b

Hellespontias, the name of a wind. 23.b. the time of it. ibid.

Hellespont, sometime a land. 40.l

Helix, a kinde of Willow or Oyster. 485.e

Heliotropium the hearbe, a direction vnto the Husbandman. 593.f

Hemeris, a kinde of Oke. 459.b

Henets, from whence the Venetians. 175.b

house-Hens seeme religious. 292.m

Hens or Pullets great layers. 298.i

Hens bring vp Ducklings. 299.e

Hens which be kindly. 300.g

grig-Hens. ibid.b

Hens and Pullein first crammed. 297.a

Hens fat how they are knowne. ibid.b

Hephæstij, mountaines in Lycia. 47.c

Hepsema, what it is. 416.l

Hercules pillars. 48.i

Hercules his altar. 96.l

Hermotimus Clazomenius his ghost. 184.e

Hercules his sphere, the planet Mars so called. 6.g

Hercules Rusticellus, who so called. 166.l

Hercynia forrest. 455.e. the wonderfull trees that are there growing. 455.f

Marcus Herennius a Counsellor struck with lightening in a cleare day. 25.f

Hermaphrodites. See Androgini.

Hermines. See Menuver.

Heroum, what it is. 273.f

Herophilus, a renowned interpreter of Physicke. 345.b

Herons of three sorts. 301.l. they engender with great paine. ibid. and lay with as much. ibid.

Hesperius, a mountain in Æthyopia. 47.c

Hexametre verse, who first deuised. 189.e

The Table to the first Tome

H I

Hiera an Iland of Æolia, neere Italy. And the burning thereof. 47.d
Hiera Iland. 40.g
Hierapolis citie. 104.l
Himantipus, what kind of birds 295.d
Himilco his navigation. 33.a
Hinds, their nature and manner of breeding. 213.d
Hinds and stags how they engender. 302.m
Hinnuli, what they be. 224.b
Hinnus, what it is. ibid.i
Hippanis, a river in Pontus, it bringeth downe bladders, 330.l. wherein it enclosed the flie Hemerobion. ibid.
Hipparchus his Ephemerides what they contained. 8.l
Hipparchus his intention concerning the Eclipse of the Sunne and Moone. 9.d
Hipparchus his opinion of the stars, his praise, and opinion of the soule. 16.e. he findeth out a new starre rising in his time. 16.m
Hipparchus. 49.c
Hippace, a kinde of crabfish. 252.l
Hippaus, a kinde of Comet. 15.f
Hippocrates honoured like Hercules. 17.b. he foretold of a pestilence. ibid.
Hippocentaur borne in Thessalie. 157.f
Hippopanes, what it is. 222.k
Hippophestar, good to purge the body for the falling sickenesse. 496.k
Hippoglottian. 452.m
Hippuri, a sort of Lobsters. 245.b
Hirpie, certain families, where in they be all witches, 155.c 155.e.
Hispalis, a Colonie. 52.b
Hines of Lanterne hornes. 318.k
draining of Hines. 317.b. what must be left for the Bees. ibid.

H O

Holmes, three at Tiber very old. 458.l
a Holme tree of a wonderfull age. 495.b
a Holme tree of a monstrous bignesse. 496.b
a Mast-Holme tree of two sorts. 458.l
Holothuria, fishes of the nature of plants. 264.g
Holy daies unto Vulcan. 48.g
Homers Ilias couched within a nut-shell. 167.b
thicke Hony nothing commendable. 317.b
thin Hony will not thicken. ibid.
Hony engendreth in the aire. 317.b. when it is engendred. ibid. of what mater. ibid. how it is corrupted. ibid. it is diverse, according to the tokens of good hony. ibid. regions. 316.b
a Honey-combe eight foot long. ibid.i
Honey-combes best about Sunne-stead in Summer. 316.i
Honey when it is most gathered. 317.a
Honey in some sort hurtfull for Bees 321.d
Hondearia, a kind of Plumes. 436.m
Honey apples. See apples Melimela.
Honey who made first. 188.l
Hornes of great bignesse. 331.f
How they stand, and to what use they are put. ibid.d.e
what beasts have hornes. 331.b
Hornes of sundry shapes. ibid.
Hornets, whether they have stings or no. 322.k
Horologies how devised. 191.b.c.d
Horses wild. 200.g
Riuer-Horse his description and properties. 209.f.
invented Phlebotomie or blood-letting. 210.i
Horse of Cæsar Dictatour. 221.a
Horse entombed by Augustus Cæsar. ibid.
Horses entombed at Agragentum. 221.a
a Horse loued by Semiramis. ibid.
a Horse revengeth his masters death. 221.b
Horse furniture and harneis who first invented. 189.c
Horses loath to cover their dams. ibid.
Horse-fight, who first devised. 189.c
Horces of service used to daunce to Musicke. 221.c
their kind affections to their masters. ib. their docilitie. ibid. their perceivance. ibid.d. desiring of praise. ibid.e. their age. 222.b. their breeding. ibid.
Horses where they be worth a talent of gold. 148.b
Horses subiect to many diseases. 222.m
Horse age how it is knowne after their shedding of teeth. 358.i.
Horses and men alone have teeth of one lenell. 337.a
Horses teeth wax white by age. 338.b. their age knowne by their teeth. ibid.
a Horse where he is worth a talent of gold. 148.b
Horses, where they are thought to have no gall. 341.d
Hordearij, who they be. 561.c
Horminum. a kinde of graine. 565.b
Hortensius wept for the death of a Lamprey. 261.d
Hornets are not uniforme. 322.b. they die when Winter is come. ibid.c
Hornes of a Hart kept as monuments in India. 324.a
Hornes of Acteon and Cippus fabulous things. 331.b
Hounds. See dogs.
Hound-fishes their nature. 263.c
a House in the country how to be seated. 554
Housleeke medicinable for all maladies incident to corne. 565.c.
Houses of what beasts will heale being cut. 351.a ibid.
of Houses a discourse.

H V

Huboles or Houps gone soone as they have hatched. 284.i
a filthie bird. 287.a
ill Husbandry censured by the Censors. 550.i
to be a good Husbandman, a credit. ibid.
Husbandrie in old time, by whom it was performed. 551.f
by whom in later daies. 552.b
Husbandrie, a Prince-like profession and studie. ibid.i
Husbandry studied by what kings. 552.i
Husbandry professed of what warriors. ibid.
bookes of Husbandrie written by Mago, saued by the Senate of Rome, and translated into Latine by D. Syllanus. 552.k
Husbandmens outworkes after the fall of the leafe. 589.c
the Husbandrie in Ægypt about sowing and reaping of corne. 577.d.e
Husbandmens worke in Winter Intervalls, what they bee. 590.g.h. their workes in the Internall of the Spring, what they be. 591.c. their workes in the Spring according to Cato. ibid.
M. Varro, a writer of Husbandry. 553.b
Husbandry workes presently upon the Spring Æquinox. 593.b.

Husban-

Husbandry workes in the Summer Solstice. 594
Husking of corne. 565.c
Husbandry after the Summer Solstice. 594.i
Husbandrie at the entring of Autumne. 605.d

H Y

Hyades, what starres, and why so called. 562.d
Hyæne change their sects. 212.i
Hyades, starres called otherwise Sucula. 19.c
Hybandia Iland. 40.k
Hybride, what they be. 232.c
Hylas, a great writer of Augurie by the nature of birds. 277.c.
Hypelate. 496.c
Hyphear, what it is. 476.g
Hyphear. 496.c. the properties it hath. ibid.
Hyperborei, people so called: blessed, living long. 84.i
strange reports of them. ibid.

I A

Iacke Daw. See Chough.

I B

Ibis invented the clyster. 210.k
Ibes destroy serpents. 284.m. where they be blacke, where white. 287.b

I C

Ichneumones, a kinde of Waspe. 322.b
Ichneumon, the nature of it. 208.k. his combat with Aspis. ibid. he killeth the Crocodile. 209.a
Ichthyophagi, people that feed of fish, and swim naturally in the sea. 145.a

I D

Ides of March fatall to Cæsar. 591.b
Idoll of the Meremaid where honoured. 103.b. the names thereof. ibid.

I L

Ilex. See more in Holme.
the Mast of Ilex. 488.m. 100.i
Ilium and all the tract there about sometime main sea. 39.e

I M

Imaus, a mountaine. 154.b
Images res famous. 175.d
Imperfections incident to corne sowne. 574.g.b.i

I N

Incendiaria, a bird unlucke. 277.b. the reason of the name. ibid.
Incense. See Frankincense.
India full of strange and miraculous things. 155.d
India, by whome discovered. 152.b. the force of that nation. ibid. the long continuance of their kingdome. ibid. sixtie rivers therein. 125.c
Indian trees unnamed. 361.b
a hundred & twentie nations of India lacking swain. 125.c
the nation of Indians described beyond Nilus. 126.k
India bringeth forth all things bigger than other. 155.d
the reason thereof. ibid.
Indians subiect to no diseases. 155.e. engender with beasts. 157.a.
Indian sea fishes bigger than others. 235.b.c
Indus the river. 106.l. receiving into it sixtie other rivers. ibid. more of this river. 127.c
Infants borne before the seventh moneth, never live. 158.k
knowne oftentimes to want the passages of nostrils and eares. 336.l
Infants toothlesse, not to be burned in a funerall fire. 164.l
Infants how they lie in the mothers wombe. 304.a. they sleepe much and dreame, how they be formed there. how they come forward afterwards. 164.b
Inoculation. See Grafting in Scitscheon.
Inning of corne after sundry sorts. 602.l
Insects how winged. 326.i. how they be offensive. ibid.
Insects do breath and sleepe. 311.c. none have teeth. 327.a having legs, go not directly. ibid. how engendred. 329.d what they be & why so called. 310.c. they have no bones. 345.a. they have no taile save onely scorpions. 327.a
Inventors of sundry things. 187.c. & deinceps:

I O

Ionian characters first used generally. 190.k
Iordan river, the praise thereof. 100.m. & c.
Iouis Barba, a plant good for arbors in gardens. 468.k

I R

Ireland the description thereof. 86.k
Irio, what kinde of graine. 565.b

I S

Isidorus, a writer. 48.i
Isidos-Placamos. 402.i
Isis, the Planet Venus. 6.i
Isocinnamum. 374.g
Islands that newly appeare out of the sea, and the reason thereof. 39.f
when Islands have sprung up. 40.g
what Islands have joined to the maine. 40.k
Islands in the Gaules Ocean. 86.i
Islands in the Ocean. 88.k

I T

in Italy lightenings be common, and why. 25.d

I V

Iuba, a king memorable for learning. 92.i
Iugerum. See Acre.
Iudiciall court of Capitol matters, who first invented. 189.a
Iu iubes, what fruit. 437.f
Iuncus Odoratus. See Squinanth.
Iunipers. 489.a
Iuno the Planet Venus. 6.i
Iuno Lacinia. 48.g
Inpiter Planet his colour. 13.c. to him lightenings are attributed. 14.g
Iupiter Lycæus, and his chappell. 75.b
Inpiter Olympius, and his chappell. 74.i. famous for the games there used. ibid.
Iupiter Cassiopeus his temple. 79.d
Iulius Cæsar Dictatour his singular parts. 168.k
Iuvie renowned for Date trees. 384.m. the description thereof. 100.l. how divided into ten gouernements. ibid.
Iuie unwilling to grow in Asia. 480.b. employed in solemnities to Bacchus. ibid.i. an enemie to other plants. 480.i male and female. ibid.k. both male and female of three sorts. 480.k
Iuie, Nysia, Bacchica. ibid.l
Iuie Erythranos. 480.l
Iuie Chrysocarpos. ibid.
Iuie wood of a wonderfull propertie to trie wines delaied with water. 481.e. Iuie garland the first. 456.m

Kernil-

The Table to the first Tome of Plinies Naturall History.

K E

Kernils in fruit different. 447.e
of the Kell in man and beast. 343.c

K I

of Kidnies. 343.d.e
Kidnies are in all foure footed beasts that bring their young quicke. ibid.e
Kindnesse naturall examples thereof. 174.g
Kings fishers. See Halciones.
Kine and Buls how they engender. 302.m
King of Taprobane how he is chosen. 130.m. he may be deposed, condemned, and put to death, the manner of his execution. 131.a.b
King of bees described. 318.m. exempt from labour. ibid.
Kinning in an egge, what it is. 298.b
in Beasts, Kine haue bigger voices than Buls. 353.e
Kites reckoned among Hawkes. 275.e. their nature. ibid.
they taught the vse of the Helme in the ship. 275.f
are troubled with the gout. ibid.
Kissing of women by kinsfolke upon what occasion. 418.k

K N

Knees being wounded in their hollowes, bring present death. 350.i
of Knees a discourse. ibid.
Knurs in timber. 489.b

L A

Laburnum, what manner of tree. 468.k
Labeones who they were. 336.l
Laboria in Campane, a most fruitfull tract. 567.f
Labrisca, bastard wild Vines. 538.g
Lacca, the best Casia or Cauell. 373.e
Lactes placed next to the bag of the stomacke. 342.l
Lacydes accompanied with a Goose. 280.k
Ladanum the best. 370.k. the price thereof. ibid.
Ladanum how it is gathered. 370.g
Ladanum of two kindes. ibid.i
Laestrigones, monsters of men. 154.g
Laertes, a king mucked ground with his own hands. 507.b
Lagopus, a bird why so called. 296.b
Lalisiones, what they be. 224.i
Lama what tree. 369.e
Lambes named Cordi. 226.l
Lambes how to be chosen. ibid.
Lampades, flaming torches in the skie. 17.b
Lampadias, a kinde of Comet. 15.f
Lampido, the onely woman knowne to haue been daughter to a king, a kings wife, and mother to a king. 176.l
Lampries in France how they are marked. 248.i
Lamprey, a fish. 245.b
Lampreies of fresh water. 246.g
Sea Lampreies their nature. 248.b
Lampyrides what they are. 593.c
Lanata, what apples. 438.g. why so called. ibid.
Lanati, a sort of Pikes. 245.e
Land in the country made distinction of states at Rome. 550.m.
Land worth fortie denary, the short cubit. 581.d
Land Mediterranean fittest for fruits. 501.c
Land how much assigned by king Romulus to his subiects. 549.d.
Land of whom to be bought. 553.e
little Land well tilled. 554.m
Lands may be ouermuch tended. 555.b
Lanists of Lacedaemon his swiftnesse. 167.a
Lanterne, a sea fish. 249.d
Laodicea a cite, the description thereof. 107.a
Larch tree. 462.l. the timber and the liquid rosin thereof. ibid. how it is drawne. 465.b
Larch tree female. 487.b
Larch tree of great length. 489.d
Lares, a temple to them: neere to which an altar erected to Orbona. See Orbona.
Large space between the stomacke and the paunch, is cause of more hunger. 342.l
Lawes who first inuented. 187.e
Lawrea, the leafe of Lawrell. 454.g
Lawrell tree not smitten with lightening. 27.a
Lawrell grones, why called Triumphales. 454.g
Lawrell a medicine for the Rauens. 211.a
the mad Lawrell. 495.d
Lawrell tree how it was employed at Rome. 452.i
Lawrell, Delphicke, Cyprian, Mustacea. ibid.
Delphicke Lawrell described. 452.k
Cyprian Lawrell described. ibid.
Lawrell Tinus or wild Lawrell. 452.k
Lawrell Augusta or Imperiall. ibid.
Lawrell Baccalia. 452.l
Lawrell Triumphall. ibid.
Lawrell Taxa. 452.d
Lawrell Spadonia. ibid.
Lawrell Alexandrina. 452.m
Lawrell Idea. ibid.
Lawrell, token of peace. 453.b
Lawrell much honoured at Rome, and why. ibid.c
Lawrell fairest vpon Parnassus. 453.c
Lawrell not smitten with the lightening. ibid.
a Lawrell Chaplet vsed by Tiberius Caesar against lightening. 453.d
Lawrell why vsed in triumph. ibid.
Laurcola, 453.a. described. ibid.
Laurices, young Rabbets or Leuerets. 232.b
Laurus, the onely tree in Latine that cineth name vnto a man. 454.g
who laughed the day that he was borne. 164.m
Lax, a fish. 243.a

L E

Lead, who first found out. 188.l
Leagne who first deuised. 189.i
Leape yeare. 6.b
Learned wits honoured. 171.f
Leaues of Aspen tree neuer hang still. 514.l
Leaues that alter their shape & form vpon the trees. 470.b
Leaues of some trees turne about with the Sunne in the Tropicke of Cancer. 407.i
Leaues of the trees how they be framed aboue and beneath. 470.k.
Leaues of trees distinguished by their bignesse, forme, and substance. 470.l.m
Leaues
Leaues distinguished by other qualities, and their order. 471.a.
Leaues of trees, good fodder. 471.b
what Leaues are apt to shed, and which are not. 469.d
a Philosophicall discourse touching the cause of shedding or holding Leaues. 469.e.f
Leaues of what trees hold their colour. 470.g
Lectos, a promontory in Troas. 471.f
Ledon. 370.i
Lemnos Island. 378.g. their manner. ibid.
Length of the legs and necke, answerable for the proportion in all creatures. 339.e
Lentill where and when to be sowne. 569.e
Lentills of two kindes. ibid.
Lents and Lenes in Latine whence deriued. 569.e
Lentiske berries preserued. 448.k
Lentuli, why so called. 550.b
Leocrocuta, what kind of beast. 206.b. and what of nature. ibid. how engendred. 212
Leonides rebuked Alexander the Great for burning too much Frankincense. 367.f
Leontophonus, what beast. 217.e. and why so called. ibid.
Leopards how they lie in wait. 308.g
Leptorhages, what grapes. 495.m
Lepo or Mole, a kinde of fish. 249.c
Letters or characters who inuented. 187.f
Leuaines. 566.b.i. the nature thereof. ibid.l
Leuci, kinde of Herons with one eye. 334.g
Leucocomum, a kinde of Pomegranats. 398.b
Leucogeon, a place. 568.b. it yeeldeth chalke to make white frumentie, and a great reuenue yearely. ibid.
Leucosia Island sometimes ioined to the promontory of Syreus. 540.i

L I

Libanus mount, the description thereof. 102.i
Liciniani, why so called. 163.a
Licinius Stolo condemned by vertue of his owne law. 551.d
of mans Life, the tearme vncertaine. 180.l
Life short, a benefit. 183.b
Licorne. See Monoceros..
Lignum, a fault in Cytron wood. 396.b
Lightenings attributed to Iupiter. 14.g. the reason thereof. ibid. presages of future things. ibid.
Lightenings seldome in Summer or Winter, and the reason. 25.c. in what lands they fall not. ibid. the sundry sorts and wonders thereof. 25.e. diuerse obseruations touching them 26.g. raised by coniuration. ibid.k. generall rules of lightening. ibid.m. it is seene before the thunderclap is heard, and why. ibid. what things are not strucken with lightenings. 27.e
Lights, the seat of the breath. 341.a. spongeous and full of pipes. ibid.
Limose, what fishes. 243.c
Lime at the root of Cherrye-trees hastens their fruit. 546.k
Limning. See Painting.
Linden trees differ in sex. 466.i. their fruit no beast will touch. ibid.
the Linden tree yeeldeth fine panicles for cordage. 466.i
the timber will not be worme-eaten. ibid.k
Linnen fine cloath whence. 80.l
Linnet very docible. 293.a
Likenes of children to parents, grandsire, or others. 160.m
161.a.b. the reason in Nature. 161.c
Likenesse of one man to another diuerse examples. 161.d & deinceps.
Lions of the right kinde how they be knowne. 200.i.k
Lions bones will strike fire. 344.m
Lions how they will walke. 350.k
Lionesse lecherous. 200.k
Lionesses engender with Pardes. ibid.
Lion iealous of the Lionesse. 200.k
Lionesse, how oft shee beareth young. 200.l. and the manner thereof. 201.b
of Lions two kindes. ibid. their nature and properties. ibid.
Lions long liued. 201.c
Lions crucified. ibid. and why. ibid.
Lions gentle to those that submit themselues. 201.d
Lions spare women and babes. ibid.
Lions entreated with faire language. 201.e. their disposition knowne by their tailes. ibid.f. their generositie and magnanimitie. 202.g. whereat they be affrighted. 202.i their diseases and remedies. ibid.
Lions first shewed at Rome in the cirque. 202.k. how they be taken. ibid.l
Lion ioked and put to draw at Rome. 202.m
a Lions thanke fulnesse. 203.d
Lions die with tasting Leontophonus. ibid. or drenched with the wrine. 217.f
of Lips. 336.l
Liquor falling from heauen. 316.m. how good. ibid.
Lisards their nature. 218.k
Lisimachus strangled a Lion. 202.m
Liuer lieth on the right side. 341.b
Liuers found in sacrifice without the head or fibres. ibid. seene with twaine. ibid. what they foreshewed. ibid.
Liuers in sacrifice found inward, to the number of six. 341.b
Liuer found cut, presageth ill hap. ibid.c
Liuer receiueth blond from the heart. ibid.d
Liuer of Mice and Rats groweth at mid Winter. 342.g
bath so many fibres as the Moone is dates old. ibid.
Liuers continued in salt a hundred yeares. 342.h
who Lited a long time. 180.l
Livia Augusta made triall by an egge whether shee were with a boy or a girle. 299.d
Livia Drusilla Augusta presented with a bay branch in a Hens bill falling into her lap. 453.e
Lizards tender skinned and foure-footed. 336.b
Lizards how they engender. 302.n. they deliuer their eggs at their mouth. 305.a

L O

Lobe, the stalkes of Miller. 558.i
Lobsters want blond. 252.i. they cast their coats in Spring ibid. dieth for woe. 270.g
Lobsters their nature. 252.i
Locry, a free state: with the description of their country. 73.c.
Locupletes (i. Rich men) why so called. 550.i
Locusts how they vtter their voice. 353.a
Locusts and Grashoppers haue no eies. 334.g
Locusts lay egges in Autumne. 327.b. their young creep on their wings. ibid.c. the mother of them dieth at the bringing forth of her young. ibid.c. they can kill serpents. ib.d
Locusts in Indea three foot long. ibid. they are caried away with wind. 327.d. they flie many daies without rest. ib. foresee

foresee a tempest, ib.e. darken the sunne with their flight ibid. burne corne with their blast. ibid.
Lollia Paulina how shee was adorned with pearles. 256.k
the price of them. ibid.
Lomentum. 568.m
Lora, what it is. 417.c
Loretum, a place. 454.g
Lote tree Capillata, and why so called. 495.a
Lote trees of long continuance. 494.m.495.a
Lotophagi, people. 397.b
Lots taken for a god. 4.k
Lotus tree in Affrick. 397.a. the description thereof. ibid.
the fruit, ibid.b. it serueth for meat and drinke. 397.c
Lotus the hearbe. ibid.
Lotus tree wood. ibid.
Lotus of Ægypt. 397.c.d. the strange nature of the head and flowre, ibid.e. the root feedeth hogs. ibid.f
Lotus tree why it is regarded much at Rome. 476.k. the description thereof and the vses. ibid.
of the Louse disease, Pherecides died. 184.g

L V

Luceia called on the stage a hundred yeares. 181.c
Lucentum a towne of the Latines. 53.d
Lucerna, a shining fish. 249.d
Lucifer, why so called. 6.i
Lucina, the name of Diana, and whereupon. 494.m
Lucini, men so called. 335.e. why so called. ibid.
Lucius Martius. 48.h
Lucius Cossinius turned from a woman to a man on the very marriage day. 158.h
Lucius Sylla vnworthily named Fœlix. 177.d
Lucius Metellus onely suffered to ride in his coach vnto the Senat. 138.b. thought most happie. ibid.g
Lucius Apronius his sonne how fat he was. 334.l
Lucius Opimius and Quintius Fabius, when they were Consuls an arch seen about the Sunne. 17.e
Lucius Portius and Marcus Acilius when they were Consuls, a round circle about the Sunne. ibid.
Lucullus resisted by the muddie slime Maltha at Samosatis. 46.m
Lungs are but in few fishes. 335.e
Lungs that are little cause the body to be swift. 341.a
Lupi, a sort of spiders. 323.d. they spin not. ibid.
Lupine a direction to the husbandman. 594.g
Lupine meat medicinable. 272.g
Lupines not easily mowed downe. 571.c
simpathie betwixt Lupines and the Sunne. ibid.d. wonderfully affectionat to the earth. ibid.
Lupines sow themselues. ibid.e
Lupines sowing is as good as soile or compost. 571.f. 572.g
Lupines steeped mens meat. ibid.
Lupines how to be kept. ibid.
Lupines profitable to be set in ground. 508.g
Luce-bones what they be. 195.b
Lusitania whence it hath the name. 51.f
Lusitania, the description thereof. 88.i
Lutarius, a kinde of Barble. 246.b
Lutense, a kinde of Pelagie purples. 259.a

L Y

Lyacuitma what it is. 217.f
Lycus riuer. 268.b
Lyrare what it is. 579.f
Læstrigones, monsters of men. 154.g.
Lycion, what composition it is. 362.b

M A

Macrobij, and other people liuing long. 156.l.m
Macedonia the description thereof. 77.a
Macer. 362. the medicinable vertue of the rind. ibid.
Machlis, what manner of beast. 200.g
Macius Island sometime ioined to Eubœa. 4.i
Macrinus Vistus how he vsed to bleed. 346.g
Meander riuer where it now runneth by goodly meadowes, in times past was all sea. 39.c. the description thereof. 108.b.
Menander how he loued his studie. 172.m
Magnesia, the description thereof. 36.m
Magnesia Island. 40.k
Magna, what it is. 383.c
Maid child in Rome became a boy. 158.b
Males in all beasts stronger than females. 352.k. some are excepted. ibid.
Males haue more teeth than females. 338.g
Maladies and death consumes bland. 346.i
Maldacon. See Brochos.
Malacha. See Brochos.
Malens a mountaine. 36.g
Maladies of trees what it is. 541.c
Malis bonis what it meaneth. 555.d
Malobathron, a plant. 378.l. the description thereof. ibid.
and the kindes. ibid.m
Malobathrum the leafe. 379.a
Malt made stronger drinke in old time. 428.b.i
Maltha, a slimie mud so called. 46.m
Maltha, a kinde of mud in a pond of the citie Samosatis. ibid. the strange nature of it. ibid.
Man how long he groweth. 345.b
Mans brest onely broad and square. 343.e
Man onely bleedeth at the nose. 346.g
Man onely two footed. 349.b
Man onely hath a cannell bone, and shoulders. ibid.
Man onely hath palmes on his hands. 350.l
Man in Ægypt hath foure eies. 354.b
Man for his proportion hath most braine. 352.b. hath more braines than woman. ibid.
Man his braines onely panteth and breatheth. 333.a. they are not setled before he speaketh. ibid.
Man onely wanteth power to shake his eares. 333.b
Man onely hath face and visage. 333.d. his forehead declareth his nature. ibid.
Man onely borne without teeth. 337.e
Man, than whom nothing more proud and wretched. 4.m
Man, the best gift he hath bestowed vpon him, that he can rid himselfe by death out of his miseries. 5.a
Mans flesh sacrificed and eaten. 154.g
Man to man a god. 4.g
Man compared with other creatures. 152.i
Man hath no certaine time to abide in the wombe. 258.k
Mankind more inordinate than other creatures in the act of generation. 302.m
the Mani-foot fish Ozæna. 250.m
Manilius wrot of the Phœnix in Arabia, dedicated vnto the

the Sunne. 272.b. the age of this bird and manner of dying. ibid. hence the young Phœnix is bred. 271.c
Mandri people women bring forth children at seuen yeares of age. 157.a
Manlius Capitolinus, first that was rewarded with a mural crown. 170.k. his deeds and rewards. ib. his praise. ib.
Manna, what it is. 376.b
Manna Thuris. 367.e
Mantichora, what kinde of beast. 206.k. resembleth mans language. 222.l
Maples of many kindes. 466.k. the wood commended for fine graine, and serueth in curious workemanship. 466.l
Maquerels. 243.e
Cn. Martius first deuised to cut out arbors at Rome. 359.b
Marcellus Eserinus brought plain trees into Italie. 358.m
Marcotis Lybia bordering vpon Ægypt described. 95.d
Mares of the nature of Hermophrodites. 352.i. seene they were at Rome. ibid.
a Mare in fole wan the prize in the Olympian race. 304.g
Mares better than stallions in war seruice in Scythia. 222.l
Mares conceine by the wind. ibid.
Mares how they be brought to admit Asses to couer them. 303.e.
Mares with fole labour as well as before. 303.f. they steale their foling many times. 304.g
Margarides, Dates. 387.b
Margo, a kinde of Limestone. 505.d
Mario a fish of pleasant taste. 243.b
Mariorum oyle the best. 382.g
C. Marius commended by Sylla Fœlix for building a manor house in the countrie. 554.i
Marmosets where bred. 106.g
Marmotanes their nature. 226.m
Maiorine, what Olines. 432.g
of Marrow. 344.l.m
Marrow neuer found but in hollow bones. 344.l
Marrow of the Vine tree and nature thereof. 526.i
Marrow of the backe descendeth from the braine. ibid.
Marrow of a mans backe proueth a snake. 305.b
Marsians endued with a vertue against serpents. 154.l
Mars his nature and motion. 6.g
Mars his course least of all others can be obserued. 12.m
his colour. 13.c
Mars his motion and light. 10.b
Marsyas hung himselfe in a Plane tree. 495.d
Marsyans descended from ladie Circes sonne. 154.l
Martia, the name of a ladie, which was stricken with lightening, being great with child, her child killed, and shee without harme. 25.f
Martines, enemies to Bees. 292.i
Martines called Apodes. ibid.
Martines or Martinets. See Swallowes.
Martius Musician strone with Apollo. 107.b
Martius in an Oration of his, his head was on a flaming fire. 48.b
Massaris, what it is. 379.d
Mast trees honoured especially by the Romanes. 456.g
Mast, a great reuenewes in some countries. ibid. ground for bread. ibid. serued vp to the table for delicates. ibid.
Mast of different kindes. 456.b
beech Mast sweetest of all others. 458.i
beech Mast described. ibid.k
Mast of sundry trees. ibid.l
Mast differ sundrie waies. 459.a
Mast which is best for feeding cattell. 459.e.f
Mast of a ship of maine bignesse. 489.e
Mast tree how it groweth. 525.f
Mastick tree sheweth three reasons of plowing ground. 599.b.
Mastick the rosin of the Lentiske tree. 424.g
Mastick gum. 369.c. the best. ibid.f. issueth of the Lentiske tree. 370.g
of the Matrice. 344.g.b
Mattmacians their presumptuousnesse. 15.b
Matutine rising or setting of fixed starres. 587.d
Mauises change their colour. 285.f
Mauritania, the description thereof. 90.i

M E

Measure of the sea. 149.d
Measure of the parts of the world. ibid.e
Medow grounds how to be chosen and ordered. 595.b. when to be mowed. ibid.
Medea burnt her husbands concubine by force of Naptha. 47.a.
Medowes called Prata or Parata. 553.f
Media, the description thereof. 122.i
Medica described. 573.b. how and where to be sowed. ib.c.d
a singular forage. ibid.
Medicines not applied in due season, be mischiefes. 546.g
Melampus taught to vnderstand birds language. 296.l
Melitæi, dogs, whence so called. 71.f
Meleandrya. 243.d
Mellaria, a towne. 51.d
Members of mens bodies of miraculous effects. 168.b
Memorie lost by sundry occasions, 155.
Memorie rare examples. 167.f. reduced into art. 168.g
Members genitall of a bonie substance. 352.b. in what creatures. ib. are medicinable for the disease of the stone. ib
Memmonides, birds. 284.k
Memphis, sometime weere the sea. 36.e
Men slaine for sacrifice. 154.g
Men conuersing generally with beasts. 154.b. their deformitie and swiftnesse. ibid.
Men headed like dogs, their manners. 155.e
Men aboue fiue cubits tall, their strong constitution of bodie. ibid.
Men without noses and mouthes in Ægypt. 146.l
Men that know not the vse of fire in Ægypt. ibid.
Men that goe euer naked. 177.b
Men eight cubits high, called Olabij. 147.b
Men headed like dogs, called Cynamolgi. ibid.e
Men in Æthiopia which liue onely on wild locusts. 147.f
Men and women greatest footed for their proportion. 150.d
Men surnamed of trees. 499.c
Men made to husband the earth. 516.g
Men weigh heanier than women. 165.e
Men haue been slaine and yet not bled. ibid.
Men canonized, wherefore. 54.g. their strange shapes. 155.f
Menoba, a riuer. 52.i
Mentor plucked a still out of a lions foot. 203.b
Mercurie, so named to expresse his nature. 4.g
Mercurie his nature and motion. 6.k. of some called Apollo. ibid.

Mercurie his stations. 10.*i. wherefore his starre differs not from the Sunne aboue three and twentie degrees.* 12.*h*
Mercurie his colour. 13.*c*
Mercurie his colour. *ibid.*
Meremaides. 236.*b. no fabulous things.* *ibid.i*
Meremen, or Seamen. *ibid.i*
Merce, an Iland. 36.*g*
Merops a bird. 289.*b*
Mese wind. 23.*a*
Mesosphæron. 364.*k*
Messalina, the Empresse of vnsatiable lusts. 302.*i*
Lu. Messalinus Cotta deuised a dish of meat made of Geese feet and Cockes combes. 280.*l*
L. Metellus his rare praises. 177.*f*
Metellus Macedonicus highly commended. 178.*i. his vnhappie fortune.* *ibid.k.l*
Meteagrides, what birds. 284.*k*
Metopia, what trees. 375.*d*

MI

Mice and Rats indocible. 295.*b*
Mice presage the fall of an house. 211.*e*
Mice forced a people to void out of an Iland. 212.*b*
Mice great theeues. 233.*a*
Mice presage shining things to one. 232.*m. they gnaw yron and steele.* *ibid.*
Mice engender more in a drought. 305.*a*
Mice of Ægipt prickely and goe on their hinder feet. 305.*a*
Mice most fruitfull. 304.*l. they engender by licking.* *ibid.*
young Mice found with young in the bellie of the old dam. 304.*l*
Mice forced the inhabitants of Troas to abandon the region. *ibid.m*
Mice and rats ominous in some cases. 233.*f*
field-Mice sleepe all Winter. *ibid.c*
against Mice, Rats, and Dormice to be serued vp to the table, an Ark made. *ibid.*
of the Midriffe. 342.*b*
Miel-dewes remedied in corne. 576.*g*
Miletus, the head citie of Ionia. 108.*g. the diuerse names thereof in former times.* *ibid. it brought forth that noble Citizen Cadmus.* *ibid.*
Millet how it groweth in the head and beareth fruit. 558.*h*
it maketh diuerse kindes of bread. *ibid.*
Milke rained. See Raine.
Indish Millet of greatest encrease. *ibid.i*
Milke of a woman before shee haue gone seuen moneths, is not good. 548.*g*
Millet where it is much vsed. 555.*f.* 556.*g*
Milke vsed in sacrifice. 418.*h*
of Milke a discourse. 348.*h*
Milke of a woman how it is most pleasant. *ibid.*
Millet how to be ordered for preuenting maladies incident thereto. 575.*d*
Milke that commeth first from a Cow, is called Beestings, it will be as hard as a pumish stone. *ibid.*
Milke of shee Asses when it is not good. *ibid.*
Milke of Cammels most thin. 348.*i*
Milke-way what circle. 599.*c*
Milke of Asses most thicke. *ib.it whiteth womans skin.* *ibid.*
Milke of all sorts will thicken by the fire. *ibid.*
Minutius Augurius honoured with a statue. 551.*c*
Misselto a wonder in Nature. 496.*b*
Misselto vpon the Oke. 460.*m*
Misselto of three kindes. 496.*g*
Misselto of what tree it groweth. *ibid.k*
Misselto how it groweth and whereupon it commeth. *ibid.m*
Misselto for what it is thought good. 497.*d*
Mines of brasse who first digged. 188.*i*
Mists when they are seene. 29.*b*
a kinde of Mist like vnto a pillar, and so called. 23.*a*
Milo his strength. 166.*m*
Militarie orders and discipline who first deuised. 189.*c*

MO

Modenna, a territorie. 39.*d*
Mola, a Moone-calfe. 163.*c*
a Monster embaulmed and preserued in hony. 158.*g*
Molluscum, what it is. 467.*a*
Monstrous births. 157.*f*
Monarchie, who first erected. 189.*a*
Mona an Iland. 36.*k*
Monkie. 206.*b*
Monoceros, what kinde of beasts. 212.*b*
Monosceli, what kinde of men. 156.*g*
Moon her nature, motion, and effect. 6.*d. the diuerse motions hereof obserued first by Endimion, who therefore is said to be in loue with her.* 7.*a. eclipse thereof in the night only, and why.* 7.*d. See further in Eclipse.*
Moone lesse than the other Planets, and the reason thereof. 9.*f. what difference there is betweene the earth and the Moone.* 14.*i*
Moon how many furlongs from the cloudy region to her. 14.*m*
Moone in the middest betweene the earth and the Sun. 15.*b*
Moon-calfe, what it is. 163.*c*
Moon to be obserued in cutting hair of head & beard. 488.*i*
Moone to be obserued in falling timber. 487.*e*
Moones three appeared. 18.*g. by her power grow the bodies of fishers Muskles.* 204. *foresheweth wind and weather.* 611.*e*
Moone with all power it hath ouer things on earth, and in the sea. 44.*c. creatures that haue no blood, doe most of all feele her power. ibid. a Planet feminine, and of her nature.* 44.*k. nourished by the fresh water. ibid. how to be knowne croisant, in the wane full, and change.* 607.*d*
to be obserued in some points of husbandrie. 607.*b*
Moone-calues how engendred. 304.*a*
Moramarusa, what. 85.*c*
Morphnos, a kinde of Ægle. 271.*e*
Mosses sweet. 375.*e*
Mouldwarpes vndermine a towne. 212.*b*
Mouldwarpes passe vs in the sence of hearing. 306.*g*
Mould blacke and red not alwaies best. 502.*k*

MV

Muckewhen best to be spread.. 508.*i*
Muckhils how made and where. ib. how kept frō snakes. *ib.*
Muing of foules who first deuised. 297.*c*
Mulberry tree lasteth long and why. 474.*g*
Mulberries described. 447.*c. it is of three colours.* *ibid.*
Mulberries of the bramble. 447.*d*
Mulberrie trees the wisest of all others. 472.*d. how to be cut for the liquor thereof.* 486.*h. they giue signe that cold weather is gone.* 494.*b*
Mules how engendred. 223.*f. which be so called properly.* 224.*b. bearing foles, prodigious.* *ibid. in Cappadocia they engender and beare.* *ibid.*
Mullets their nature. 245.*e*
a Mule eighteen yeares old. 224.*i*
Mulviane Quinces. 436.*b*
Mures Marini, what they be. 247.*b*
Murex, what fish. 249.*a*
Munkies and Marmosetes adore the new Moone. 231.*e*
Muscadell grapes and wines. See Apiane.
Muscke who first inuented. 189.*d*
Musicall instruments. *ibid.*
Mushromes. 460.*l*
Muscat, what Quinces. 436.*b*

MY

Myagrus, the god of the Eleans. 285.*a*
Myrobalanes. See Ben.
Myrobalanes Petræa. 374.*k*
Myrtles of sundry kindes. 451.*d*
Myrtle Hexastica. *ibid. why so called.* *ibid.*
Myrtle tree lasteth long. 494.*d*
Myrtles of three principall kindes. 451.*c*
Myrtle berries vsed in stead of Pepper. 450.*l*
Myrtle growing in the place where Rome standeth. *ibid.m*
Myrtle Plebeia and patritia at Rome. 451.*b*
Myrtle Coniugiali. *ibid.c*
Myrice. 398.*m*
Myrrhina, what wine. 419.*a*
Myrrhe Atramiticke. 369.*b*
Myrrhe Dusaritis. *ibid.*
Myrrhe Dusaritis. *ibid.*
Myrrhe trees where they grow. 368.*k, their description.* *ib.l*
Myrrhe of sundry sorts. 369.*b*
Myrtle berries of diuerse kindes. *ibid.d. how counterfeit.* *ib.*
Myrtle leaues in pouder very good. 451.*e*
Myrtle wine, how made. 451.*d*
Myrtle oyle, the vse thereof. *ibid.e*
Myrtle coronets vsed in triumph. 452.*g*
Myrtle rods and rings to what vse. *ibid.*

NA

Nacre, a kinde of fish. 261.*c*
Nævius Pollio, a giant. 165.*b*
Names of Vine sprigs or sets. 526.*k.* 527.*a*
of Nailes a discourse. 349.*f*
Naphtha, the strange nature thereof, and affinitie it hath with fire. 47.*a*
Naphtha, what it is. *ibid.*
Nard leafe of three sorts. 364.*k*
Nard the best. *ibid.l*
Nard Celticke. *ibid.m*
Nard Rusticke. *ibid.*
Narcissimum ointment. 381.*d*
Nardinum oyle. 382.*k*
Nardus sophisticated, and true, how distinguished. root, spike, and leafe. 364.*k* *ibid.*
Actius Narnius the Augur. 443.*d*
Nathecusa Island. 40.*k*
Nature onely accounted of diuine power. 5.*b*
Nature of wild trees mitigated by translating them. 510.*l.*
Natures secrets not to be attained vnto. *ibid.i*
Nature or ground diuerse. 506.*l*
Naull, the place where veines do meet. 345.*e*
Nabie, a kind e of beast. 205.*d*
Navew. See Rape.
Navigation, who deuised. 190.*g*
Nauigations vpon the sea. 32.*k. by whom the parts thereof were sailed and discouered.* *ibid.*
Nauplius a fish, how it swimmeth. 252.*b*
Nautilos or Pompilos, a fish, and wonder of Nature. 150.*l*
Nayles grow in dead men. 550.*g*
Nayles are the extremities of the fingers. 345.*e*
Nayles in creatures except the Elephant. *ibid.*

NE

Nea Island. 40.*g*
Necke how it is composed. 339.*a*
Neckes of all beasts may turne about. *ibid.*
Needle fishes Belone. 266.*b*
Needle worke whose invention. 228.*i*
Nemesis her place behind the right eare. 250.*k*
Neptune his chappell famous for the games there vsed euery fiue yeares. 74.*m*
Nereides. See Meremaids.
Nerion. See Oleander.
Nero how he tooke out the blew and blacke markes in his face, after beating. 400.*b*
Nero borne with his feet forward. 160.*b*
Nero, how much Incense he waisted at the funerall of Poppea. 371.*e*
Neasts wonderfully made by birds. 288.*d*
Sea-Nettle, a fish. 262.*i*

NI

Nicaus, borne of his mother a faire woman, resembled his Grand-father a blacke Æthiopian. 161.*b*
Nicias ouer fearefull of the Moone Eclipse. 9.*e*
Nicolas Dates. 287.*e*
Nightingales contend who shall sing best and longest. 586.*i*
Nightingale a wonderfull bird for singing. 286.*g. presaged singular skill in Musicke to Stesichorus.* *ibid.i*
Nightingales dearer than men. 286.*k. a white Nightingale.* *ibid.*
Nightingales singing counterfeited by men. 286.*l. not tongued like other birds.* *ibid.m*
Nightingale parle Greeke and Latine. 293.*e*
Niger riuer and nature thereof. 96.*b*
Nigræ, people whose king hath but one eie, and that is placed in his forehead. 147.*e*
Nilus the ploughman of Ægypt. 577.*b. his manner of rising.* *ibid.e*
Nilus riuer described. 97.*b. hidden for twenty daies iourney.* *ibid. surnamed Astapus, and why.* 97.*d. the diuerse names thereof.* *ib. when he riseth & when he falleth.* 98.*b the ordinary height of his rising is sixteene cubits.* *ib. the greatest eighteene cubits, in the time of Claudius.* *ibid.i the least that euer was, against the death of Pompey and the reason.* *ibid.*
Nilus water helpeth generation and conception. 157.*d*

NO

of the Nose and nosthrils. 336.*k. man onely hath his nose bearing forth.* *ibid*

OB

Obeliske in the Vaticane. 489.*e*
Oblivion. See Memorie.

The Table to the first Tome

O C

Ocella, who they be properly. 335.e
Occhi trees. 362.m
Occultation of fixed starres. 587.d
Oeymum, a kinde of prouender. 573.b

O D

Odoraria, Myrrhe. 369.d

O E

Oenanthe, a bird. 287.a
Oenanthe, the grape of the wild vine. 379.d
Oesypum. 370.b
Oestrus, a bad kinde of Bee. 318.b

O I

Oisters haue hearing. 306.g
Oister bread. 566.g
Oisters employed in wicker ware 486.a
Ointment or oyle of Cinnamon, 382.k
Ointments odoriferous, whose invention. 380.k
Ointment of Marioram. ibid.
Ointment of Saffron. 381.b
Ointment odoriferous how they be kept and tried. 383.c
to what vse they serue. ibid.e. they may be spared. ibid.
against ointments an edict. 384.i

O K

Okes of great age. 495.c
Okes of sundry kindes. 459.a
Oke droppings are hurtfull. 51.b
Oke Mast. See Acornes.
an Oke in Calabria alwaies greene. 469.c
Okes fruitfull. 460.l
Oke Robur beareth Catkins. ibid.
Oke ashes. 461.a
mightie Okes sailing vpright in the sea. 455.d
Oke Quercus beareth berries like bull heads. 463.i. it beareth bals, pils, callosities. ibid.

O L

Olalygones, names of Frogs. 338.l
Oleander, what kinde of plant. 469.a. poyson to certaine beasts. ibid. counterpoison to man. ibid.
Oleastrum a kinde of Box tree. 467.c
Olenus loued by a Goose. 280.k
Old oyle of Oliues, the vse thereof. 435.e
Old forme of Spaine changed. 53.b
an Olive tree made barraine by the licking of a Goat. 542.b.
Olive burnt vnto the very stumpe, hath reuiued againe. ibid.
Olive garden in the Marrucine territory, crosseth the highway. 544.g. it exchangeth her place with a plot of corne. ibid.
Olive trees require greatest distance. 515.b
Olives to bee grassed in Autumne. 521.e. not to bee set in a holme, whereout an Oke hath beene stocked. 522.b.
Olive plot how long it hath prospered. ibid. when they are to bee cherished. ibid. in their blooming they are most hurt by violent raine. 540.m
Olive cheplets. 432.l
Olive branches. ibid.
Olives how to be planted and ordered, according to Cato. 432.m.
Olive Hort-yards where to be made. 433.a
Olives how to be gathered, prepared, and dressed. 433.b
Olives how to be kept after Catoes precepts. ibid.
Olives, what fire they require in pressing. ibid.e
Olive trees hurt by the licking of Goats. 435.d
Olive in the Forum of Rome. 444.g
Olive trees neither in Italy, Spaine, or Affricke, during the reigne of the kings of Rome. 429.e
of Olives, the opinion of Hesiodus, where they love to grow. ibid.d
of Olives three kindes according to Virgill. 429.e
Olive trees require pruning and other dressing. ibid.
Olives when to be gathered. ibid.
Olives which are best. 430.l
Olive dregs or lees. ibid.
Olives blacke, what they signifie. 431.a
Olives when they need watering. ibid.
Olives to be gathered by hand, or shaken gently, and not to be beaten downe. ibid.b.c
Olives of diuerse kinds to be gathered at sundry times. ib.d
Olives royall. ibid.
Olives when to be pressed after gathering. ibid.e
Olives the greatest, not most oleous. 432.g
Olives of Italy fullest of oile. ibid.
Olives outlandish kept to be eaten. 432.g
Olives of Decapolis no bigger than Capers. ibid.
Olives confected or condite. ibid.
Olive trees of India. 363.c
Olives how they are made pleasant to tast. 432.h
Olives purple. ibid.
Olives pleasant of themselues. ibid.
Olives proud. ibid.
Olive trees of long continuance. 449.b
Olive wild of great antiquitie. 495.e
Olive trees liue ordinarily two hundred yeares. 446.c
Olyra, what kinde of corne. 559.d

O M

Omphacium, what it is. 430.l

O N

Onces where they breed. 206.g
Onesicratus, Alexander his captaine and writer. 36.b
Onocrotali, what birds. 295.e

O P

Opheostaphyle. 490.i
Ophiogenes, people, their strange nature. 154.l. they cure the sting of serpents. ibid.
Opinions diuerse concerning the generation of Bees. 318.g
Opinion of the learned concerning nature of marrow. 339e
Opinions concerning the dammage of cattell. 507.e
Lu. Opimius and Q. Fabius, when they were Consuls, an arch seene about the Sunne. 17.e
Opimian wines. 419.d
Opobalsamum. 377.a. how it was sold. ibid.b
Opopanax. 378.l
Opiet, a tree whereunto a Vine is wedded. 535.b

-O R

Oracles or sage sentences of Cato and others concerning Husbandry. 555.b
Orbona, an alter erected to her. 3.e
Orcades Islands. 86.l
Orchites, what Olives. 429.e. why they are so called. 433.b
Orestes his body. 165.a
Orge, a strange fountaine. 58.i
Oricum

Oricum Island. 40.k
Order of them digesting which chew not the cud. 343.a
Origan found by the storke to be medicinable. 210.m
Orion or Otus. 165.a
Orites, people of India. 157.b. eat fish onely, rost it against the Sunne. ibid.
Oripelargus. See Perenopterus.
Oryx, a beast with one horne in the middest of his forehead. 331.d
Oryx, a wilde Goat. 231.d
Oryx, a Goat that drinketh not. 307.f. a remedie against thirst. ibid.
Oryx a wilde beast in Aegypt, standeth full against the dog starre when it ariseth. 19.f
Orobanche. 575.a
Orpheus his descent. 78.g
Orphe, a fish. 245.b
Orygometra, what bird it is. 283.a

O S

Oscines, what birds they be. 278.l
Osprey or Ossrey, what kinde of foule. 272.k
Ostrea or Ostria. 398.m
Ossery, a towne. 52.b
Ossigi, a towne. ibid.g
Ossifragi, a kinde of Aegle. 272.k
Ossonoba, a citie. 51.d
Ostippo, a towne. 52.i
Ostriches naturally bald. 332.k
Ostriches the biggest fowles that bee. 270.l. their description. ibid. their swiftnesse on foot. ibid. their egges and feathers. ibid.m. their foolishnesse. ibid.l.

O T

Otes, why so called. 283.c
Otes vsed for bread. 574.b
Otides, what kinde of birds. 281.c
Otus and like Owles onely haue feathers like eares. 33.d

O W

Owles their wit when they fight with other birds. 277.f
Owsels depart for a time. 284.g

O X

Oxen of the Troglodites hang their hornes downewards. 381.d.
Oxen at two yeares age change their teeth. 338.i
straight Oxen how to be coupled in yoke, and how they labour at the plough. 579.a. how much they plough in a day, according to the ground. ibid.b
Oxe gall dedicated to Nature. 342.g
Oxen how highly honoured in old time. 225.c
Oxycedrus. 388.l
Oxyporsinum. 433.b

O Y

Oyle, who drew first out of Olives. 189.a
Oyle of wild Olives. 433.c
Oyle of Chamelea. ibid.
Oyle of Cicer Kichers, ibid. how it is made. 434.g. the vse thereof. ibid.
Oyle of Almonds bitter. 434.g
Oyle of blacke Myrtle berries. ibid.b
Oyle of garden Myrtle. ibid.
Oyle of Cypros and Cipresse. 434.i
Oyle of Pentike Cipricum, of Chestnuts, Sesame seed, Rice. ibid.
Oyle Melinum. 382.b
Oyle of Oenanthe. 434.i
Oyle of fishes. ibid.
Oyle of Plane berries. ibid.
Oyle of Quinces. 382.g.b
Oyle de Bass. 382.g
Oyle of Myrtles. ibid.
Oyle of Quinces. See Melinum.
Oyle of Lillies. 382.b
Oyle of Fenigreeke. ibid.
Oyle of Myrrhe. 382.m
Oyle, an acceptable liquor to be vsed outwardly. 428.i
Oyle, the vses thereof. 432.k
Oyle Licinianum. 430.i
Oyle abused by the Greekes. ibid.
Oyle de Bays how it is made. 434.g
Oyle Olive, the price at Rome. 429.c
Oyle Olive of greene Olives. ibid.f. worse for age. 430.g
and why. ibid. it hath three degrees in goodnesse and no more. 432.i
Oyle of Graine Gnidian. 434.i
Oyle Glaucinum. ibid.k
Oyles of Asphalathus. ibid.
Oyles of sweet Calamus, Baulme, Iris or Flowre de Luce, Cardamomum or graines of Paradise, Melilot, French Nard, Panax, Maiora, Elecampane, Cinnamon root. ib.
Oyle Rosat. 434.d
Oyle of Squinanth, of Henbane, of Lupines, of Dasfodill. ibid.
Oyle of Radish seed. 434.l. the root of Gramen. ibid.
Oyle Cortinon. ibid.
Oyle Cnecinum or Cnidium. 434.d
Oyle of Lillies. ibid. Selgeticum. ibid. of Pitch. ibid.
Oyle liquor will turne into lees. 430.m
Oyle contrary to venome of Scorpions. 325.g
Oyle lees or dregs, wherefore it is good. 435.e
Oyle killeth Insects. 355.e
Oyle of Saffron. 504.a

O Z

Ozanastis, what it is. 364.i

P A

Pactolus, a famous riuer. 107.e. the names thereof. ibid.
Padians, a people gouerned by women. 128.b
Patii, families in Rome. 335.e. why so called. ibid.
Pazon, an Eunuch how he was sold. 175.f
Pagri, fishes. 245.a
Pala, a tree of India. 361.a
Palatium, a mount wherein a chappell was dedicated to the goddesse Feaner. 3.e
Palestmundum, a famous and populous citie in Taprobane. 130.g
Palilicium, what starre. 592.l
Palmyra, a noble citie, with the discription thereof. 104.i.
Palurus, a thorne plant. 398.g
Palma Christi. See Ricinus.
Palme. 379.d

The Table to the first Tome

Palmesfvie frivolous. 354.k
Palmiprimum, what wine. 421.a
Pamphylia of Coos, inuentresse of weauing silke. 323.a
Pan governour of Lucitania. 51.f
Panaces or Panax what manner of plant. 378.k
Panathenaicum ointment. 381.c
Pandore, a kindred of Indians that line in vallies vntill two hundred yeares age. 156.m
Panicke of many kindes. 558.b. *it yeeldeth very much floure.* ibid.
Panicke with Beanes, much vsed in Piemont. 566.g
Panicke, a corne, why so called. 558.g
Pantheon, a temple of Venus in Rome. 257.d
a Panther seeketh helpe at mans hand. 204.g. *her thankefulnesse.* ibid.i
Panthers skins ibid.i. their sweet smell and hideous lookes. ibid.k.
Panthers marked in their shoulders. ibid.
Panthers exhibited in shewes at Rome. ibid.l
Panthers how they be poisoned with Aconitum, and cured againe. 211.b
Pantherine, what manner of Tables. 396.g
of Paps a discourse. 346.k. 347.d
Paps of a Dolphin placed in the bottome of her belly. 248.g
Paps of a Sow hauing beene newly farrowed, bee excellent meat. 344.i
Paps how they are placed in creatures. 347.i
Paps of Elephants are vnder their shoulders. 347.e
Papyr cane in Ægypt. 391.e
Papyr when it was first made, and where. ibid.
Papyr reed or cane how it groweth. 392.g.b
the vse thereof besides Papyr. 392.b
Papyr Hieratica. ibid.k
Papyr Augusta. ibid.
Papyr Liuia. ibid.l
Papyr Amphitheatrica. ibid.
Papyr Fanniana. ibid.
Papyr Saitica. ibid.m
Papyr Taniotica. ibid.
Papyr Emporetica, or shop-papyr. ibid.
Papyr how it was made. 393.a
Papyr Macrocola. ibid.c
Papyr Claudian. ibid.
Parchment deuised at Pergamus, and vpon what occasion. 392.g.
Pardalium, an ointment. 381.c
Parietarie, a medicine to diuerse birds. 211.c
Parkes when first deuised. 231.d
Parre, certaine birds. 288.l
the Parrat what manner of bird. 293.b. *named Sittace. ibid. can prate, and pronounce man. ibid. hard headed, feeble footed. ibid. loueth wine.* ibid.
Parrats haue the hardest scull. 332.l
Parrats are first seene in the Island Gagandu. 446.b
Parts most principall of man, are skinned by themselues. 342.l.
Parts genitall make difference in naisons. 352.b
Parts genitall of Hermophrodites serue for both sexes ibid.
Parthenius promontory. 40.k
Parthians subiect to corrupt breath. 335.b
no Partridges in Bœotia. 289.g
Partridges of Paphlagonia haue two hearts. 340.e
Partridges will neuer be fat. 344.k
Partridges, how industrious they are in building their neasts. 289.b
Partridges exceeding lecherous. ibid.c
Partridges tread one another for want of Hens. 289.c
Hen-Partridges conceiue with the very aire of the Cockes. 289.d. *their ieolousie.* ibid.e.f. *their policie to saue their young.* ibid. *their age.* 290.g
Pascua the reuenewes at Rome. 550.k
Passienus Crispus fancied a beech tree. 496.g
Patales, a famous port in India. 36.g
Pateton, a kinde of Date, why so called. 387.f
of Patience sundry examples. 167.e
Patroclus, the name of an Elephant. 194.k. *his hardie aduenture and reward.* ibid.
Paulinus Suetonius, a Romane that went first ouer Atlas. 92.b.
Paunches of hoofed beasts hard and rough. 343.a
Paunch neuer compassed with bones. 343.c
Pausie, what Olives. 429.e

P E

Peaches foure kindes. 436.b
Peaches, why called Persica. 437.c
Peaches in Persia, whether they be venomous or no. ibid.d
Peacockes crowned with hairie feathers. 331.a
Peacockes beautifull, wittie, and proud. 278.m. *his life.* 279.a. *they be malicious ibid. made fat and serued vpto the table first.* ibid.b
Peacockes lescherous. 301.a
M. Ausidius Lurco fed Peacockes, and made a gaine thereby. 379.b
the Pea-hen how shee layeth. 300.m. *and hatcheth.* 301.a
Peares more pointed than Apples. 439.f
Peares how preserued. 440.g
the properties of Peares and their vses. ibid.
Peares how they are kept long. ibid.k
Peares Barbarian, Venerian or coloured, Royall, Patrician, Voconian, Volenian. 439.d
gourd Peares. ibid.
Peares called Libralia. 436.k
Peares proud. 439.a
Peares Crustumine. ibid.
Peares Falerne, why so called. ibid.
milke Peares. ibid.
Syrian Peares, why so called. ibid.
Peares Dicimiana. ibid.b
Peares Dolabellian. ibid.
Peares Pseudodacimiana. ibid.
Pompeian Peares. ibid.
pap Peares. ibid.
Tyberian Peares, why so called. 439.e
Peares taking name of countries. ibid.
Peares Licerian, Seuerian, Tyrannian, Fauonian, Laterian, Numidian, Grecian, Tarentine, Signine. ibid.
Peares Testacia, why so called. 439.b. *Onychine.* ibid.
purple Peares. ibid.
Peares Myrapia, Lauret, Nard, Barley, Bottle, Thick-skin, Coriolana. 439.d.
Pearles how they be engendred, why they be called Vnions. 254.m. 255.e.
Pearles the soueraigne commodities of the world. 254.k

the

of Plinies Naturall History.

the cause of their dimnesse or clearenesse. 254.l
Pearles much in request with the Romanes. 256.g
Pearles out of Arabia. 371.f
Pearles found in Acarnania will lose their colour. 256.i
Pearles their price and estimation. 254.k
Pease, when to be sowne. 569.e. *how codded.* 570.g
Pecunia, whence derived. 550.b
Pegasi, what birds. 296.k
Pegasi, winged horses. 206.g.
Painting who first deuised. 190.g
Pelagre, a kinde of purples. 259.a
Pelamides, fishes. 243.c
Pelasgum. 453.a
Pelecinon. See Securidaca.
Pelion, a hill measured and the height thereof. 31.d
Peloponnesus, the description thereof. 73.c
Penens a famous riuer. 76.l
Pennyroyall flowres in mid-winter. 588.l
Pennyroyall flourish freshest in mid-winter. 20.b
People of the East feed of grashoppers. 325.a
People without heads. 156.g
People with eares that couer their whole body. 157.a
Pepiniers, how they are to be made. 510.l
Pepper treet. 361.c. *long pepper ibid.d. white pepper, blacke pepper.* ibid.
Pepper sophisticate. 361.e
Peppers their price. ibid.
Percnopteros, what kinde of Hawke. 272.g. *and her properties.* ibid.
Percnos. See Morphuos.
Perfumes. See Ointments odoriferous.
Periurie euen in the very Capitoll. 4.i.
Perne Island. 40.k
Persea, a venomous tree. 437.d
Persica, what manner of tree, and the fruit. 390.i. *the wood durable and serueth for images.* ibid.k
Pestilence beginning in the South goeth to the West. 183.d
continueth but three moneths. ibid.

P H

Phalangia, a sort of spiders. 322.h
Phalangium engendred in Ermile. 575.b
Phalerides, daintie water-foules. 296.g
Pharnaces, a people in Æthiopia. 155.b.
Pharus, an Island cut from Ægypt by the sea. 39.e
Phasitæ, what olives. 432.g
Phæditus was accounted most happie. 180.b
Pherecides, Pythagoras his master fore-telling an earthquake. 37.d
Phiala, a place in Nilus. 226.c
Philip of Macedony fighting against Greece, the skie appeareth blandie. 17.c
Philippides his swiftnesse. 161.m
Philtrum how he loued Bees. 313.f
Philomides, the courrier or Post of Alexander. 35.c
Phœmonoe male of Ægles. 322.b
Phœnicobalanus. 374.i
Phœnicopterus tongues. 296.g
Phœnicurus. See Robin-redbreast.
Phœnix what manner of bird. 271.e
Phœnix the bird, why it tooke that name. 387.c
Phœnix adorned with a plume of feathers. 331.a
Phrygian tune by which Iupiter moueth. 14.l
Phthorium, a wine to cause abortiue fruit, how it is made. 422.g.
Phu. 364.l
Phycos. 401.d
Phygemata, vntimely fruits of shell-fishes. 255.a
Phyros, what it is. 401.d
Physeter, what fish. 235.f
Physicke, who deuised. 188.i
Physicians taxed for dealing with dangerous medicines. 400.g.
Physicians that excelled. 174.l

P I

Pietie. See Kindeneſſe, Naturall.
Pia mater, a tunicle of the braine. 332.m
Pictures of great price. 175.c
Pies learne to speake. 293.c
Pig taken from the pap, maketh it returne flat to the bellie. 347.f.
Pigs know their owne paps. 547.f
Pikes of the sea. 245.e
Pillers of Cyrassus did beautifie the theatre. 499.b
Pilummi, why so called. 350.b
Pindarus feared the Suns eclipse. 9.a
Pine tree and Pinaster. 462.b
Pine tree chaplets. 434.g
Pine nuts or apples how they grow. 435.e
Pine trees euer full of fruit. 473.e
Pinna, a cockle in Acarnania. 256.b
Pinnotar, what fish. 253.a
Pip in hens. 300.b. *the cure.* ibid.
Pipes of Canes, Reeds, Shanke-bones, Siluer, Box and Lotos. 484.i
Pipes made of reeds and canes. 844.l
Pyrrhus his great toe, and vertue thereof. 155.c. *it was reserued for a holy relique.* 155.d
Pirrie or wine of peares. 421.a
Pisles of Camels serue for bow-string. 392.b
Pismires greedy of Cypresse seed. 512.c
Pismires how the change and full of the Moone ruled by the power of the Moone. 601.c
C. Piso a notable drinker, aduanced therefore by Tiberius Claudius. 427.c
Pisones, why so called. 550.b
Pisse of Beares hard as horne. 152.b
Pissoceros, the second foundation of the worke of Bees. 313.b
Pistores, who they were in Rome. 567.b
Pitch trees of six kindes. 462.b
Pitch plaisters. 424.b
Pitch wine. ibid.
Brutian or Calabrian Pitch. 424.l
Pitch how it is knowne good from bad. ibid.
Pitch where it hath to grow. 462.i. *the description thereof.* 462.k.
Pitch trees commended for their rosin. ibid.l
timber of Pitch tree for what it serueth. ibid.
Pitch tree how it differeth from the Larch. 463.b
Pitch trees grow againe if they be burnt to the roote. ibid.
Pitch tree why it is called Phthiriophoros. 463.a
Pitch both liquid and stony, how it is drawne and made. 464.b.i.
Palimpissa or stone pitch. ibid. *Brutian pitch.* ibid.
Pitch rosin out of the pitch tree. 465.a

stilled

The Table to the first Tome

stilled Pitch, what it is. 464.k
Pissasphalta, Pitch. 465.b
Pitch, where and when it is gathered best. ibid.
Pitch hurtfull to trees. 541.c
Pithecusæ Islands. 40.b
Pithous, a kinde of Comet. 15.c
Pitydia, what Pine nuts they be: good for the cough. 435.f
Pits for wells who sunke first. 118.i

P L

Plaice, a fish. 145.b
Players upon the stage rich. 175.c.f
Plane tree whereupon Marsyas hung himselfe. 495.d
Plane tree honoured for shade onely. 358.g
Plane tree honoured for fruit. ibid.b
Plane trees nourished with wine at the root. ibid.b
Plane of admirall higuesse in Lycia. 358.b.i
the Plane tree of C. Caligula. ibid.k
the Plane tree of Candie so much renowmed. ibid.l
dwarfe Plane trees. 359.b
Plane tree turned to an olive in Laodicea. 543.d
Planets, by whose motions are occasioned the seasons of the yeare. 19.i
Planets keepe their power as well under the earth as aboue. 42.l
Planets and their motions to bee considered in husbandrie. 585.f. 3.a
Planets seuen. 5.f
Planets their mooning: they goe a contrary course to the starry heauen. 7.c
Planets fed with earthly moisture. 10.c
Planets, touching their motions and lights. ibid.k
Planets their circles or angles. ibid.m
Planets, why some seeme higher, some lower. the opinion of them confuted that thinke Planets doe arise and mount from earth to heauen. 11.d. *whence their stations tooke their name.* ibid.f
generall rules as touching Planets. 12.b. *their seuerall distinct colours.* 13.c. *their distances one from another.* 14.i
Planets of their musicke and harmonie. ibid.k
Plants winding about others & growing upon them. 496.i
Plants haue an appetite to incorporat one in another. 523.a
Plants in what regard they be accepted. 450.i.k
Plants of peares and apple trees how to be nourished. ibid.
Pletanistæ, fishes in the riuer Ganges, 143.b
Plato how he was honoured of Denis the tyrant. 171.f
Platter of Æsope. 297.d
Platyserotes, a sort of stags, why so called. 331.c
Plaustes accounted gods. 53.d
Plaines of Rosea the very fat of Italy. 504.g
Plenty of corne among olive trees in Bætica. 515.c
Plinie confesseth himselfe beholden to former writers. 10.k
Plotia a reed. 483.e
Plough, who first deuised. 189.a
L. Plotius found by the smell of a pretious ointment. 384.l
Plumgeons, what birds. 296.b
Ægyptian Plumtree. 391.a
Plums of sundry sorts. 436.m
asse Plums. 437.a
purple Plums. ibid.
white Plums or wax Plums. ibid.
nut Plums. ibid.
apple Plums. 437.b
olive Plums. ibid.
damascen Plums. 437.b

P O

Poetry, who inuented. 189.f
Polenta, how it was made. 561.a
Pogonie a kinde of Comets. 15.a
Poisons, food to serue creatures. 307.a
Poisoning deuised by man onely. 548.k
Poles two, where supposed to be. 84.i
Polydorus his tombe. 78.b
Polypes or Pourcuttles. 250.b.251.a
Polypi, how they liue. 251.a. *one of them robbed the fishers. ibid.b.*
of a theeuing Polype a wonderfull example. 251.d
Pollen, fine flowre. 564.b
Polybius his search into Africke, and opinion concerning the description thereof. 91.c
Polymita, what kinde of cloaths. 228.i
Pomecitrons, why called Medica. 437.f
Pomegranats, how to be kept. 440.i.k
Pomegranats appropriat to the territory of Carthage. 398.b
diuerse kinder. ibid.
Pomegranate rindes. 398.i
Pomegranate flowres. ibid.
Cn. Pompeius praised. 168.l.169.a
Cn. Pompeius no purchaser of his neighbours land. 555.a
hated for his cruelties to Elephants. 196.i
Pompeius magnus, why so called. 169.a. *compared to Alexander and Hercules.* ibid.b
Pompey subdued 876 *townes of Spaine.* 169.b
how he came to be called Magnus. ibid.
Pompey his inscription on the temple of Minerua. his deeds. ibid.d ibid.
Pompili, certaine fishes. 244.b
Pome-poires, or Peare-apples. See apples Melapia.
Ponticke nuts. See Filberds.
Pontus, the Islands thereof. 85.b
Poplars their diuerse kindes. 470.b
Poplar wood good timber but for often lopping. 490.i
white Poplar mosse. 379.d
Poppie-worke cloth. 228.b
Poppies both wilde and tame, when to be sowne. their medicinable vertues. 589.c.d ibid.
Poppæa wife to Nero, how shee bathed her body. 348.i
Popular gouernement, who first erected. 189.a
Popularia, a kinde of Abricocks. 436.l
Porkepines, their description and nature. 215.c
Porphyrio, what manner of bird, and how hee drunketh. 295.d.
another Porphyrio. 296.k
Porpuisses, fishes. 241.a
K. Porsena raised vp lightning by coniuration. 26.k
Porcius Catonis commendable parts. 169.f. *& deinceps.*
Posidonius the Mathematician. 14.l
Posidonius honoured of Pompeius. 172.b
Pottery, whose deuise. 188.l
a Poulter cunning in egs-
Pourcuttle, a fish. 299.e
Poyson of Scorpions is white. 247.e
Poyson of serpents proceedeth from the gall. 325.a
341.e

P R

Præcordia, the vpmost inwards of man. they be a defence to the heart. 342.i ibid.

Præsages of fortune by the teeth. 164.l
Præsage by fishes. 244.l
Præsages by the swarling of Bees. 519.d
Præsages by weaning of spiders. 324.i
Præsages by flight of Herons. 334.g. *by lightenings, sneesings, stumbling with the foot.* 4.l
Præstar, the name of a blast and the nature thereof. 25.a
Prætexta, garments, when deuised. 228.b
Prænarication, what it is in Husbandry. borrowed by lawyers. 379.c. *a word* ibid.
Praxon. 401.d
Praxitales his grauen image. 175.d
Price of Isocrates his oration. 151.f
Priests of Cybele their manner. 352.b
Principles about Husbandry. 555.a.b
Priests, fishes two hundred cubits long. 235.c
Procella a storme. 25.b
Procyon, what starre. 597.b
Prochyta Island. 61.c
in Prodigies who were first skilfull. 189.d
Prodromi, what sigs. 474.k
Prodromi so called, are the Northeast winds, and why. 23.d.
Prognostications of weather and wind. 610.d
Prognostications by the eyebrowes. 354.l
Prognostication by the eyes. ibid.
Prognostication of weather and other future things by dumbe beasts. 221.c
Prohibitory, what bird. 277.c
Promontory Nymphæum. 48.g
Promontory Saturnes cape. 53.d
Promontory Taurus. 268.l
Propagation of trees two waies helped. 516.g
Propolis the third foundation of the worke of Bees. 313.b
Propolis, what it is. 585.d
Protropum, what it is. 487.d
Prusias K. of Bithynians his son was borne hauing a bone in stead of a gums in the vpper iaw. 164.i
Prose, writing and speaking who inuented first. 189.f

P S

Pseudonardus. 364.k
Psyllians named of king Psillus. 154.k
Psyllians venomous by nature. ibid.
Psyllians how they make triall of their wiues chastitie. their bodies kill serpents. ib. ibid.

P T

Ptæambati, people which haue a dog to their king. 147.c
Ptisana, how it is made. 561.e. *highly commended.* ibid.
Ptithongus, Mercurie his tune. 14.l

P V

Publius Catienus Philotimus burned himselfe for loue of his master. 174.k
Publius Rutilius died suddenly. 134.i
Pusse apples. 438.l
Pulmentaria. 563.b
Pulpa in trees, what it is. 486.k
Pulse, what it is. 557.c.558.i. *how it is rooted.* 557.a
Pulse of all sorts how it groweth. 558.l
Pulse called in Latine Legumina, and why. 576.m
Pulse of the arteries bewraieth hidden diseases. 345.d
Pulse what kinde of leafe they haue. 558.m. *long in blowing and not at once.* 559.a
Purple fishes 258.g
Purple colour from whence it commeth. ibid.b
Puteal Libonis. 443.d
Puttockes. See Kites.
Purple fishes of two sorts, Purpura, and Buccinum. their difference. 258.i ibid.
Purples Pelagiæ, Tenieuse, a kinde. 259.a

P Y

Pyannets what kinde of birds. they remoone their nests. 285.d 289.g
Pygargi, a kinde of goats. 231.d
Pygargos, a kinde of Ægle. 271.c
Pygmæi Spythamei, a people in India three handfuls high. 156.i. *their warre with cranes.* ibid.k
Pyraum, an Athenian hauen, by the retiring of the sea left drie land. 39.a
Pyromantie whose deuise. 189.d
Pyrosachne, a plant. 398.k
Pyrrhæum the forrest, burnt and renewed. 463.b
King Pyrrhus his great toe and other parts medicinable. 155.d.
Pyrrhus bearing twice a yeare. 474.m
Pyrrhus K. of Epirus intended to ioyne by a bridge Greece vnto Italy. 64.g
Pyrrocorax, what bird. 296.b
Pythagoras first found out the nature of Venus planet, and when. 6.g
Pythagoras found out the distance betweene the earth and the Moone. 14.a
Pythius of Massiles a writer. 43.a
Pyxacanthus Theophrasti. 36.

Q V

Quadrant for an husbandman. 609.c
Quailes flie by troups. 282.k
Quailes how they helpe themselues by flying. they feed vpon white Ellebore seed. ibid. they be subiect to the falling sickenesse. 283.a.c ibid.
foure Quarters principall in Rome. 551.a
Quickenesse of spirit, examples thereof. 168.i
Quicke creatures come naturally into the world with their heads forward. 304.i
Querquetulana, a gate in Rome. 462.g
Quinces, why called Cydonia. 436.g
Quinces of diuers kindes. ibid.b. how to be kept and preserued. 440.i
Quinctius Cincinnatus sent for from the plough to be Dictator of Rome. 552.g
Quintana Prata. 552.g
Quisquilium. See Cusculeum.

R A

Radij, what olives. 429.c
Radish keepeth away drunkennesse. 242.l
Ragged apples. 438.l
Raine, food of trees. 500.i

Raine in midſummer nought for vines. ibid.k
Raine in Winter moſt in ſeaſon for plants. 501.b
Raine at the ſame time helpeth not all trees. ibid.
Raine by night better than by day. 501.e
Raine how it is cauſed. 20.k
Raine ſtrange and prodigious, of milke, blood, brickes, tyles. &c. 27.f.28.g
Raine not at all in ſome lands. 42.b
Raine water ſaued for ordinary vſe to drinke. 146.m
Raine-bow ſheweth what weather. 612.m
Rainebow the nature and reaſon thereof. 28.l.m
Rana-fiſh his manners. 262.b
Rams and their nature. 226.m
Rams generally armed with crooked hornes. 331.c
Ranke corne how to be remedied. 576.
Rankeneſſe hurtfull to corne. 482.g
Rapes, and their vſe. 570.i.k. their plentifull commoditie, they grow every where. ibid.k
Rapes male and female. 570.l
Rapes of three ſorts. 570.m
wilde Rapes medicinable. 571.a
Rapes with what ceremonie to be ſowne. ibid.b
Raſpis deſcribed. 485.f
the flowres of Raſpis medicinable. ibid.
Ratumena the gate of Rome, and whence it tooke that name. 222.g
Rats of Pontus their nature. 216.m
a Rat ſold for two hundred ſeſterces. 233.a
Rauens taught to ſpeake. 293.f
Rauens their properties. 276.i. how they conceine with young. ibid.k
a Rauen ſaluted the Emperour. 294.g. ſolemnly interred. ibid.b. his death reuenged by the people of Rome. ibid.
Rauens employed by an hawker. 294.k
a Rauen made ſhift to drinke at a bucket. ibid.l
Ray killeth wheat. 575.a

R E

Red Deere. See Stags.
Red ſea, why ſo called. 134.g
Reeds of ſtrange bigneſſe. 155.e
Reeds where they grow. 524.m. they multiplie and encreaſe of themſelues. 515.a
Reeds and Canes to be ſet before the Calends of March. ib.
Reeds ceaſe to grow at mid-winter. ibid. alwaies to be cut in the wane of the Moone. 525.b
Reeds employed to many vſes. 482.g
Reeds vſed to calfret ſhips. ibid.b
Reeds ſerue Eaſterlings for arrowes. ibid.f
Reeds of Italie compared with thoſe of Candie and Picardie for making of ſhafts. ibid.k.l
Reeds differ in leaſe. 483.c
what part of the Reed fitteſt for euery pipe. 484.i
Reeds for Faulconers poles. ibid.
Reeds for angle-rods. ibid.
Reeds for vine pearches. ibid.
Reeds and canes how to be planted. ibid.k
Reeds, how to be killed. 557.a
Rerenice. See Bats.
Refreſne or Reſrine. 569.b
Regions in Theſſalia, how it grew to be cold. 503.d
Attilius Regulus ſlew a monſtrous ſerpent. 199.d
Religious reuerence in the knees of men. 350.b
Remedie againſt ſtinging of ſcorpions. 325.e
Remedies of trees common and proper. 546.l
Remedies againſt ſundry maladies in corne. 575.e
Rennet of a Rabbet medicinable for the flux of the belly. 346.k.
Report of Hercules and Pyrene or of Laturne is fabulous. 51.f
Reſidence vpon land. 555.a

R H

Rhaphanus, a venomous ſhrub. 362.l
Rhododendron, a beaſt. 205.e
Rhododendron. See Oleander.
Rhemnius Palemon an excellent good husband. 411.d
Rhinoceros, what beaſt it is. 205.e. his fight with the Elephant. ibid. horned in the noſe. 133.e
Rhododaphnis. See Oleander.
Rhodes Iſland. 40.g

R I

Ricinis. 433.f. why ſo called. ibid.
Rice corne deſcribed. 561.b.c. and the vſe thereof. ibid.
Rie. 572.l
Riuer-horſe in ſome ſort his owne phyſitian. 346.l
Riuers of a wonderfull and ſtrange nature. 45.a.b
a Riuer warme in Winter, and exceeding cold in Summer. 545.a

R O

Robin Redbreaſt. 287.a
Rocke of ſtone of a ſtrong and wondrous nature. 42.b
Rockes in Syria burne corne. 503.e
Royall ointment, what it is. 383.b
Riotd and exceſſe of Romane Senatours. 91.f
Romanes kinde and good one to another in old time. 4.g
Romanes trafficke into India. 133.b
Romanes excell all nations in all kinde of vertues. 176.b
Rome diuided into quarters according to woods adioyning. 461.f
Rooke. See Crow.
Root of an oke taking an acre in compaſſe. 477.e
a Root of a rape weighing foure hundred and one pound. 570.l. how dreſſed for the table. ibid. how preſerued coloured artificially. ibid.
Roratio a blaſting of vines after their blooming. 540.i
Roſat oile in great requeſt. 382.g
Roſin trees of ſix kindes. 462.b

R V

Rubigo in corne, what it is. 598.i
Rubigalia, a feſtiuall holiday. 600.g
Rue diſcouered by the Weaſill. 210.m
Rumbotinus, a tree. 405.b

S A

SAba, & Sabota, the proper place for frankincenſe. 366.g
Sabis a god. 368.g
Sabines called Sevini, and why. 65.a
Sacrifice young beaſts when they be in their ſeaſon. 230.g
Sagunt a child being borne preſently returned into his mothers wombe againe. 158.g
Saltpeter earth good for plants. 503.c
Salt cannot be made without mingling of freſh water. 46.k
Salamander his deſcription and nature. 305.e

Salamander not diſtinguiſhed by ſex. 305.d
the Salmon fiſh. 247.a
Sallowes. See Willowes.
Samara, what it is. 468.g
Samoſatis, a citie in Comagene. 46.m
Sambri, people where fourfooted beaſts haue no ears. 146.k
Sandalum, what corne. 559.d
Sandalides, Dates. 387.d
Sanguale, what bird. 274.b
Sapa, what it is. 416.l
Sapa in Æthiopia what it ſignifieth. 147.b
Sap of trees. See Alburnum.
Sapium, what it is. 465.d
Sapinus, what it is. ibid.
Sapinus in trees, what it is. 488.l
Sarcocolla, a tree and gum. 391.d
Sarcling, what it is, and of what vſe. 580.k
Sardis the capitall citie of Lydia. 107.e
Sardane a ſhel-fiſh. 244.i
Sargus, what fiſh. 246.b
Sari, a ſhrub. 400.k
Sarpedon his letters written in papyr. 394.l
Saturne what he is, and nature and motion thereof. 5.f
Saturne cauſeth raine, &c. 19.e
Saturne colour. 13.c
Satyres their ſhape. 96.i
Satyres haunt mountaines in India. 156.g
Satyres what they are. 156.g
Sauces how they be dangerous. 355.e
Sauine how it is helped in growing. 516.i
Sauorie or Cunilabubula found in the land Tortoiſe. 210.l
Saurornates eat but one meale of meat in three daies. 154.i
Saueurs different in fruit. 449.d
Sauce, called Garum Sociorum. 246.k

S C

Scallops. 253.d
Scallop fiſh like to the ſea vrchin. 256.b
Scarus, a kinde of fiſh. 245.f
Scaurus Conſull, found out a vaine obſeruation of lightening. 27.c
Scenitæ, people why ſo called. 139.f
Sceptrum. See Eryſiſceptrum.
Schœnus, what meaſure it is. 366.b
Sciotericon, a diall, and the finder out thereof. 36.k
Sciene, fiſhes. 244.b
Scincus bred in Nilus. 209.b. the vertues thereof in Phyſicke. ibid.
in ſundry Sciences excellent men. 174.k
Sciopodes, a people in India. 156.g
Scipio Africanus the former cut out of his mothers wombe 160.i.
Scipio Africanus the ſecond his trench ſeparating the two prouinces of Africke. 93.e
Scipio Naſicahis hard hap. 173.e. his praiſe. ibid.
Scolopendres, fiſhes. 262.g
Scolopendres chaſe people out of the countrie. 212.b
Scolopendres without wings. 327.b
Scordaſtus, a tree. 363.a
Scorpions and Solpuges depopulate a countrie. 212.b
Scorpions periſh by their young ones. 324.l
Scorpions their ſtings dangerous as ſerpents. 324.l. how they exerciſe them. ibid. they cannot quench their thirſt. 325.a. they are harmleſſe in Italy. ibid.b. they are harmleſſe to things without blond. 325.c
Scorpions, where they be harmleſſe to ſtrangers, and noiſome to inhabitants: they reuenge their brethrens death. 325.c.
Scutcheons for graffing how to be made. 520.b
Scyros wind. 23.a
Scythia free from lightening, and the reaſon. 23.c
Scythian nation, the deſcription thereof. 123.e. called by Perſians Sacæ. ibid.
Scythian ſea the water thereof freſh. 124.g
Scythians feed on mens fleſh. 153.f

S E

Sea engendreth the like of all that is in the world beſides. 235.a.
Sea-Rams. 236.k
Sea Elephants. ibid.
Sea-calues or Seales. 243.a
Sea, where it is deepeſt. 44.l
Sea hotter in winter. 46.k. made calme with oile. ib d.
Seas in the reflux and ebbe thereof liuing creatures die, and not elſe. 43.e
why the Sea is ſalt. 44.b
Seas the reaſon of their reciprocall ebbe and flow, and where they keepe no order. 42.k
marualles of the Sea. 43.f
Sea, what lands haue been turned wholly into. 40.i
Seas how they haue gone backe and deuided lands. 39.f
what lands they haue broken in betweene. 4.b
Seareeds. 401.d
Sea trefle. 401.d.e.f
Sea cobs. 287.f
Sea water vnwholeſome to be vſed in making dough. 500.a
Sea about Tabrobane full of trees. 130.b
Sea ſnakes twentie cubits long. 132.k
Sea-merle fiſh. 244.b
Sea-thruſh fiſh. ibid.
Sea yeeldeth pretious cognits and pearles. 254.e
Sea nettles and Spunges, neither liuing creatures nor yet plants. 262.i. their manners. ibid.
Sea-hare. 264.g
Sea Tortoiſe hath neither tongue nor teeth. 339.f
Seales haue not bones. 345.a
Seale fiſhes haue no eares. 333.g
Seaſoning time of the yeare in plants when it is. 471.d
Sebeſten, what fruit. 388.d
Sebeſten. 437.e
Sebeſten and Seruices may be graffed both in one ſtocke. 511.f.
Volcatius why he was called Sedigitus. 349.e
Seed, what it is. 563.a
Seed-corne of all ſorts how to be choſen. 582.m
Seed how to be diſpenſed for ſundry grounds. 483.d
ground take Seed, ſome more than other. 483.b
Seed falling from heauen engender all things. 2.b
Segeſta, a goddeſſe. 549.e
Seia, a goddeſſe. ibid.
Selenitium an Iwie. 480.l
Seleucus Nicator purpoſed to cut the land through between Cimmerius Boſphorus and the Caſpian ſea. 120.i
Selecucides, birds enemies to locuſts. 284.l
Sementine or Antimons corne. 557.d

The Table to the first Tome

Sembracena, myrrhe. 369.b
Annaus Seneca. 411.f
Senses wherein men excell other creatures. 305.e
Senses wherein other creatures excell them. ibid.
Septentrio, a wind. 22.l
Seres a people described. 130.i.k
Seres people famous for fine silke. 124.i. *their nature.* ibid.
they cannot abide to meete with others. ibid.
M. Sergius (grandfire to Catiline) his comendation. 170.l
Sergius Orata first deviser of oyster pits. 266.l
Serichatum. 374.b
Serpents having lost their eies will have new. 336.g
Serpents have but one venomous tooth. 337.d
Serpents of great bignesse. 199.d. *assaile foules of the aire.* ibid.
Serpents destroy a citie. 212.h
Serpents and lizards have long liuers. 343.b
Serpents have thirtie ribs. 343.f
Serpents some of them footed like Geese. 351.d
a Serpent barked. 202.k
Serpents how they engender. 301.g. *they lay egs.* ibid. *cheined together about vipers.* 302.b
feather of the Gracchi found two serpents within his house. 174.i. *what they presaged.* ibid.
Serpents chased away with the perfume of harts horne. 306.k.
Serpents love egs. 307.a. *they loue wine.* ibid.b
Servius Tullius being a child sleeping, had a light fire shone over his head. 48.g
Servants and slaues of great price. 175.e
Sesame. See Ricinus.
Sestius a Romane Astronomer foresaw a dearth. 598.i
Sesels or Siler-mountaine, helpeth birds to calue. 213.d
Senta, a cane in Dalmatia where in breedeth the wind. 21.e
Sewing with the needle or nell who first deuised. 188.i
Sexes distinct in all plants. 385.d

S H

Shadow of the walnut tree noysome to men. 514.k
Shadowes of trees. ibid.
Shadow of the Palme tree pleasant and comfortable. ibid.l
Shadowes of some trees no better than poison. 515.a
Shadowes are not to be seene in some part of India. 156.l
Shadowes when and where there be none at all. 35.f. *where twice in the yeare they fall contrary.* 36.b
Shee asses much pained with paine of their vdders. suckle their young but six moneths. 347.e ibid.
Shee Beares have foure paps apeece. 348.g
Sheepe how necessarie. 226.k. ibid.l
their time of engendring. 227.b
of Sheepe two principall kindes. 228.k
Sheepe which be kindely. 228.k
Sheepe rotten how to be cured. 496.l
Sheepe without galls in Euboea. 341.c
Sheepe in Naxus have two gals. ibid.
Sheepe good to eate downe ranke corne. 576.h
Shearing trees when first deuised. 359.b
Shields burning in heauen. 18.b
Shellfish the occasion of much ryot and excesse in the world 254.g.
Shindles of that wood best. 461.e.f. *they covered the houses at Rome a long time.* ibid.
Ships with proes at both ends. 129.d
Ship that brought the Obeliske out of Ægypt. 489.e. *sunk in the hauen of Ostia.* 14.
Ship of K. Demetrius of a mighties bignesse. 490.g
Shipping of sundry sorts. 190.g
Ship tackling, cables, ankers, &c. who deuised. ibid.i
Shoolers what manner of birds. 292.l

S I

Sicilie sometimes ioyned to Italy. 4.i
Sider or wine of apples. 421.a
Signes of short life. 534.i
Signifer circle in heauen. See Zodiacke.
Signes of the spring. 586.g
Signes of good earth. 505.a
Silkewormes how to be ordered. 323.b
Siligo. 562.m. *commended.* 563.c. *the finest wheat for manchet and pastrie worke.* 563.d. *a fine flowre.* 564.h *the wheat is a tickelish corne.* 564.i
Silicia or Siliqua. See Fenigreeke.
Silurus, riuer whale. 243.a
Similage a fine flowre. ibid.
Simones and Silones, sirnames. 336.k. *why so called.* ibid.
Simach the fruit. 389.e
Sinewes bind the bones together. 345.b. *being cut cause much paine.* ibid. *where they are hidden.* ibid.c
Siluer mines who first found out. 188.k
Singing whose inuention. 189.e
Siphylus. 40.m
Silurus a fish, supposed to be a sturgeon. 243.a. *his properties.* 245.e
of Sinewes, cords, and ligaments. 345.b
Sirbon lake carrying a circuit of 150 miles. 100.i
Sithes of two sorts. 395.f

S K

Skarlet graine of the oke Ilex. 461.a
Skie, strange sights seen therein in time of Octauius, Consull. 18.i
Skill in planting directed by the nature of the soile. 501.e
of the skin a discourse. 346.k
Skin subtile and thin causeth fineness of spirit. 346.k
it hath no fellowship with understanding. ibid.l
Skin of Crocodiles hard. 346.k
Skin of Riuer-horse turneth iauelines and speares. 346.l
Skin of Elephants not to be pierced. ibid.
Skins of Gorgon women hung vp in Iunoes temple in Carthage. 148.l
Skritchowle flieth not directly. 277.a. *one of them entred the sanctuarie of the Capitoll of Rome.* ibid.

S L

Slauerie who brought in first. 289.a
Slaues denoured of Lamprey. 348.i

S M

Smell most pleasant that commeth from the earth. 505.a
Smell of a snuffe of a candle causeth untimely birth. 159.c
Smilaces. 558.l
Smilax one of the names of Teugh. 463.f
Smilax how it is described. 481.d. *supposed to be vnluckie and why.* ibid. *the name of a young damsell turned into the plant Smilax.* 481.d. *the vse that the wood is emploied vnto.* ibid.c
in Smyrna a boy changed into a girle. 158.b
Snowlers what manner of birds. 292.l
Snailes. 218.i
Snake

Snake casteth her slough, and by what meanes. 211.a. *in Syria they hurt no Syrians, but deadly to strangers.* 234.i
Snow falleth not where sea is deepe. 46.k. *how it is engendred.* 29.b. *how it is good for trees.* 500.i

S O

Socrates kept one countenance alwaies. 166.b
Socrates iudged the wisest man. 173.c
Socrates never knowne to change countenance. 166.g
Soles, fishes. 244.b
Sorbuses trees how they be kept long. 440.l. *of foure kindes.* 445.c. *round as apples, pointed as peares, long as egs.* ib.
Sorbus Torminale, why so called. ib.d. *preserued in cut.* ib.e
Sosigenes. 6.k
South wind when it bloweth, causeth creatures to be lesse hungrie. 24.g. *it raiseth more surging waues than the North-wind, and why.* ibid.b
Soules of men parcell of heauen. 16.m
Soules whether immortall. 187.a.b
Southerne winds make trees feeble. 600.b. *a rocke consecrated vnto it.* 21.e. *riseth from mid-day.* 12.l
Sowes eat their owne Pigs. 230.g. *how they be splaied.* ib.k *their liuer made into a daintie dish.* ibid. *they vse not their teeth to strike as Bores.* 337.b. *enraged when they get a brimming, and how remedied.* 304.g.h. *that bee wild, breed but once a yeare.* 231.a. *raging in their farrowing.* ibid.
Sophocles enterred by warning from Bacchus. 171.d
Sowing of corne. 579.e. *in the right season.* 583.b *are in Sowing.* ibid.
late Sowing more dangerous than earely. 584.k
in Sowing the Moone and signes to be obserued. ibid.

S P

Spadones Dates. 449.c
Spagos. 424.g
Spaine, the description thereof. 87.f
Spathe, what it is. 379.e
Sparrowes short lined and letcherous. 290.m
Sphagnos, sweet mosse. 375.d
Sphinges, a kinde of Monkey or Marmosets. 232.i
Spikenard. See Nard.
Spintharus, what bird. 277.b
Spiders greatest enemies to Bees. 321.c. *where she begineth her web.* ibid.e. *hunt after Lizards.* 324.i. *lay egs.* ibid.k *being young, eat their mothers.* ibid. *the vse of their web.* 323.b. *drinketh vp the moisture of cloth.* 330.h
Springs colder in Summer than in Winter. 46.k. *leape vpward.* ibid.l
Spittle noisome to serpents. 154.l
Springs entrance when it beginneth. 590.m. 591.a
Spring corne. 5[illegible]7.d
Spiders how they engender. 324.i. *why they scatter their egges.* ibid.i
Spunges of sundry sorts. 362.l
Speights, birds called Pici Martij. 278.g. *why so.* ibid.k *effectuall in presages.* ibid.i. *their admirable nature.* ibid.k. *no Speights at Tarentum.* 285.c
Spu. Tarpeius serued in 120 foughten fields. 170.b
Spindle tree. 399.b. *the properties thereof.* ibid.
Spadones, certaine reeds. 484.g
Spelt. 363.a
Spiders foreshew the fall of an house. 211.c
Spleene fastened in the left side of the bellie. 343.c. *thought*

of Plinies Naturall History.

to be no serpents. ibid. *it hindereth the running.* ibid. *professed runners wasted in a hot iron.* ibid. *may be taken out of the bodie without harme.* ibid. *being taken away, the laughter is gone.* ibid.
Spikenard will not thriue in Arabia. 478.i
Spindle and spinning whose inuention. 188.i
Spira, faults in wood. 489.a
Spirit. See Aire.
Spondilium, an hearbe and fruit. 378.i
Spinter and Pamphylus, two players, how they resembled Lentulus and Metellus Consuls. 161.f
Spring when it beginneth. 23.c
fasting Spittle killeth serpents. 154.l
of the Spleene. 343.c

S Q

Squall, fishes. 248.i
Squilla flowreth thrice, and seweth three times of ploughing. 502.b
Squinanth where it groweth. 375.a. *the best, and price of it.* ibid.b
Squirrils, their properties. 218.g

S T

Stacte, the best Murrhe. 368.m
Stadises, a towne in Ægypt where the fall of Nilus maketh men deafe. 145.e
Stagonius. 367.e
Stagonitis. 378.a
Stag enuious to man. 213.c. *in danger seeketh to man.* ibid. *white Stags of Q. Sertorius.* 214.k. *enemies to serpents.* ib. *long liuers.* ibid.l. *their flesh good for the liuer.* ibid. *hane vnder their tongue twentie little wormes.* 333.b
Stags and Hinds. 213.c. *they teach their young to run.* ibid. *how they behaue themselues when they be hunted.* ibid.e *their sundrie qualities.* ibid.e.f. *how they swim ouer sea.* 214.g. *they cast their hornes yearely.* ibid. *how their age is knowne.* ibid.b
Staphylodendrum, what it is. 467.c
Stature of man decreaseth. 165.a
fixed Starres and starrie skie presage future weather, how and after what sort. 612.i.k
Stars predominate after the Spring of Equinox. 592.k
Stars fixed, their rising and setting to be taken two waies. 587.e.d.
Stars none lesse than the Moone. 19.d
Stars seene with the Sunne all day long. 17.d
Stars fixed which haue influence till the comming of Fauonius. 590.e
Stars & signs whether to be regarded for Seednes. 584.l.m
Star fish. 269.e
Star-lizards, stellans cast their skins. 213.b. *their venom.* ib
Stars wandring. See Planets. to them attributed the euents of things when they begin to gouerne the seas. 597.d
Stars or Planets not appointed for euery man according to his state or condition, as some vainly haue imagined. 5.c
Stars obiected in nauigation first by whom, &c. 190.i. *their shooting and falling, what it is.* 5.i. *their power and operation.* ib. *that be fixed, shine as well by day as night.* 9.f *their vnequall rising.* 34.i. *whether to be regarded for seednes.* 584.l.m. *rising and setting of which be diuersly taken.* 587.c.d. *predominant after the Spring Æquinox.* 592.k. *how they presage future weather.* 612.i

The Table to the first Tome

Stelus, what it is. 496.k
Stellions line onely by deaw and spiders. 325.d
Starres could parle Greeke and Latine. 293.e
Sterlings depart for a season. 284.b. their manner of flight. ibid.h
Stephanos Alexandri. 453.a
Stesichorus feared the eclipse of the Sunne. 9.a
Starch. See *Amylum.*
Starres running too and fro. 18.i
Stature in men and women is now decaied. 165.a
Stewes for fishes who deuised. 266.m
Straw serued for bedding. 551.a
Strength of body many examples. 166.k
Stimmata. 381.d
Strabones, who they be properly. 335.e
Stimphalides crisped on the head. 331.a
Straw how to be vsed and ordered. 602.l.m
Stones greased and enflamed with fire. 48.g
Stones of beasts how they are placed. 352.k
Stone quarries who first digged. 188.i
Stones found in trees. 489.b.c
white Stones in the maw of young birds, vsed in Magicke. 343.b.
Stone of a strange power. 42.b
Stones raining downe. 28.b
Stone in young heifers good for women. 343.c
Stones raining downe. 19.c
Stomacke how it is framed, and the vse. 340.g
Stockdoues out of the way for a time. 284.b. sit vpon their egges, as Cocke and Hen by turnes. 300.k
Storkes esteemed better meat than Cranes in old time. 282.g
their manner of flight. ibid.b
to kill a Storke fellonie in Rhessalie. ibid. kicks to their parents. ibid.k
no Storkes within eight miles of the lake Lurius. 285.c
Starres and other flames seene about the Sunne. 17.d
Stay-ship fish. See *Echeneis.*
Straw, how it is a signe of good ground. 503.a
Straw of barly, the best. 562.k
Strix, a word of cursing. 347.d
Strabones, families in Rome, why so called. 335.e
Strategia, what they be. 119.d
Strawberrie tree. See *Arbute.*
Strobos plant *Ledeum.* 370.b
Strobon in Ceraunia. 321.a. a sweet tree. ibid.
Storax, a sweet odour. ibid.c. the effects thereof. ibid.
Storax (*Calamita.*) 378.g
Styrax or *Storax* the tree. ibid.
Styrax gum of diuerse kinds. 378.k
Struthea, what Quinces. 436.b
Struthopodes, what people. 156.b
Sturgeon fish much set by of our ancestours. 245.e

S V

Subie, a bird. 277.c
Sugar. 362.k
Suns motion, what it is. 13.f. wherefore it burneth not the earth. 14.m. what Summer we shall haue, *Democritus* shewed by the Solstice. 590.g. how many furlongs from the cloudie region to the Sunne. ibid. how to know the height s of it from the earth vp to the Sunne. 15.a
Summan, what kinde of diss. 230.l
Suns heat causeth monstrous shapes in Ægipt. 146.k
Superfluitie of meat alwaies dangerous. 356.b
Subulones, a kinde of stag. 331.c
Subsolanus wind. 22.d
Sunne, a diuine power. 36.c. his Eclipse. See *Eclipse.*
Sulpitius Gallus first found the reason of the Eclipse. 8.l
Sulpetia, a Matron that consecrated *Venus* image. 173.f
Superstition in chusing *Marget.* 4.i
Superfluitie in pretious ointments. 384.g.b
Superfluous expence in Seeling and inlaid workes. 494.b
Sun greatest of the Planets. 3.b. the soule of the world. ib.
Island of the Sunne described. 132.i
Suns many seene at once. 17.f. in midwinter maketh tempests. 20.g
Suns motion, what it is. 13.f. the strange colour appearing therein. 17.g. the signes of weather depending of his rising or setting. 611.a.b. lends his light to the other starrs. 3.c
why the Sun departeth from vs in Winter. 8.g.b
Sunsteads when. 13.i
Sunne his race. 2.k
Sunne the greatnesse thereof. 8.g. by how many demonstrations it appeareth bigger than the earth. ibid.
Sunne, the best prognosticator of weather. 611.a
Signes depending on the *Suns* rising or setting. 611.a.b
Sunstead of Summer. 587.e. what weather we shall haue, *Democritus* gesseth by the Solstice day. 590.g
Sunne his power. 44.h. fed by the salt sea. ibid.l
Sumach, a plant. 389.b
Sunnes Oxen, whence the fable arose that they were kept in stall. 43.f
Superata, a kinde of *Abricocks.* 436.l
Sucula, what starres. 592.l
Surname Stolo, whence it came. 489.c
Surus the name of an Elephant. 194.i
Sufinum. See *Oile of Lillies.*
Superstition. See more in *Conceptions.*

S W

Sweate of the Pharnaces dangerous to be touched. 155.b
Swine when they goe a brimming. 229.f. how long they breed, ibid. eat their owne Pigs. ibid.g. their age. 230.b their diseases. ibid. they know the sowmards voice. ibid.i how they are knowne sicke or sound. ibid. their subtiltie and wit. ibid. their flesh yeeldeth varietie of dishes. 230.k. haue ten ribs. 243.f
Swallowes feed flying. 284.h. they are indocible. 295.b of diuerse sorts. 288.h. how they feed and keepe cleane their young birds. ibid. their neasts make a banke to *Nilus*. ibid.i. how they build. ibid.g. they fortifie an Island yearely. 288.i
Swallowes enemies to Bees. 320.i
young Swallowes being calcined, doth cure the squinancie. 288.k
Swallowes hauing lost their eies, will haue new. 336.g they are gone in Winter. 283.d. why they build not in the citie Thebes. ibid.d. nor in Byzia. ibid.
wild Swans how they flie. 282.i
Swans sing not before they die. 284.l
of Swiftnesse in running many examples. 166.m

S Y

Syrians warre against *Locusts.* 328.b
Sylke-wormes how to be vsed. 323.b
Sylla Dictatour died of lice. 329.d
Sybilla excellent at diuination. 173.d

Syria, a renowned region, the description thereof. 99.f
Syrenes fabulous birds. 296.k
Syagri, kinde of Dates. 387.b
Sycomore tree. 389.d. passing fruitfull. ibid.
Syraum, what it is. 416.l
Syce, what kinde of rosin. 463.a
Syene, a towne, at noontide in the middest of the Summer, no shadow is to be seene there. 35.f
Syringias, a kinde of Cane or Reed. 483.b
Syrites, a stone found in a Wolfes bladder. 344.g
Syrtes, people that haue legs like Snakes. 156.b

T A

Tader riuer. 53.d
of Tailes a discourse. 352.l
Taprobane Island. 157.a
Taprobane the manner of the people, and their long life. 131.b.
Taprobane thought to be a second world. 129.b
Taprobane Island description thereof. ibid.b. king of *Taprobane*, admitted the Romans upon relation of their iustice and seeing their peeces of coin all of equall weight. 129.f the maner & fashions of the Island of *Taprobane*. 130.k
Tamarix. 398.m
of Testes thirteene kindes. 448.l
of Tallow. 344.k
Tallow whether it lieth in the breast. ibid.
Tales there be of Scritch-owles feeding young infants with their milke. 347.c
Tanaquils distaffe and spindle. 228.g
Tarre out of what tree it is boiled. 464.b. whereto it is employed. ibid. the manner of drawing it. ibid.
Taprobane and *Toidis*, countries most fruitfull of pearles. 254.k.
Tarum. 298.m
Tarandus, what beast. 215.c
Tasts of sundrie sorts in hearbes. 449.b
Tasting equall to all creatures. 306.l
Tasting common to all creatures. ibid.
Tast of meats in all creatures but man, is at the lip of the tongue. 339.b
Taurus, a mightie mountaine. 105.e. the diuerse names thereof. ibid.
Taurus a bird lowing like a Bull. 293.a
Tantalus citie swallowed vp. 40.m
Tayles of serpents being cut off will grow againe. ibid.
Tayle in all creatures except men and Apes. 352.i. serueth to necessarie vse. ibid.
Tayles of Oxen and Kine greatest and biggest. 16.m
Taygetus, an hill. 37.d

T E

Teeth their nature, sundry kindes and vses. 164.i.k their presages. 164.l
Teeth of Vipers hidden within their gumbes. 337.d
Teeth of sundrie kindes, and how they be set, and to what vse, &c. 337.c.338.g
Teda or the Torch-tree. 462.m
Tepidare riuer in Italie. 545. it is warme in Winter. ibid.
Temple of Iupiter Hammon in Merse in Ægypt. 146.i
Tempests diuerse kindes thereof. 25.e
Temetrum. 418.k
Tempsis, the pitch of the mountaine. 181.e
Temerinda the name of *Meotis*, and why. 118.i
Tenerum, what it is. 2.b
Tenthorania, in times past neere vnto the seas. 39.e
Tenera terra. 582.g
Tentyrites enemies to Crocodiles. 209.d
Tennis play whose inuention. 190.g
Tepidare, what it signifieth. 545.a
Terra Tenera, earth as good as can be imagined. 504.k
Terra pulla, a tender and mellow soile. ibid.
Teramnon. 575.d.62.m
Terminatra, a feast instituted by king *Numa.* 549.e
Teredines what wormes. 492.b
Terebinth wood fine. 490.b
Territorie of *Mutina.* 48.g
Territorie of *Sabines* and *Sidicines.* ibid.f
Terpentine the cleerest rosin. 423.f
Terebinth or *Tepidian* tree. 389.a. the kindes thereof and the fruit. ibid.b
Terpentine how it is drawne from the tree. 465.b
Teventine, pine nuts. 435.e.f. wit-teeth. 338.g
Teeth serue not onely for grinding our meat. 164.k
Tetartemorion, what quadrant. 182.g
Tettigonie, a little kinde of Grashopper. 325.a

T H

Thalis Milesius among the Greekes first found out the reason of Eclipses. 8.f
Theophrastus, one of them that wrot of the Romanes. 58.i
Thracia the description thereof. 77.f
Thunder and lightening the reason thereof. 20.m
Thorne roiall. 400.l
Thirstie thorne. 492.c
Thrasymenus lake. 48.b
Thripes. 492.b
Thybians, their strange nature and eye-sight. 155.b
Thucidides called from banishment. 172.g
Thracians how they prone their fortune. 176.i
Thracians how they measure their happinesse. ibid.
Thrashing practised sundry waies. 602.k

T I

Tibur citie founded by *Tiburti*, more ancient than Rome. 415.b.
Tiberius Cæsar his saying of *Sarnell* in wines. 414.b. hee could see by night. 334.i
Tib. Cæsar wrote a Poem of the comet called *Acontias*. 15.e
Tibuli, what trees. 462.i
Tickes want meanes to auoid excrements. 330.g
Tigris, the riuer where it begins, and the diuerse names it hath. 137.a. runneth through the lake *Arethusa*. ibid.d
Tingitania province, the description thereof. 92.k
Tinea, what wormes. 492.b
Timarchus the Paphian. 338.g. had double course of teeth in each saw. ibid.
Timber trees in what way seuerally they are employed. 491.f
Tithes fine. 380.g
Tissue cloath whose invention. 228.i

T M

Tmolus the hill well planted with Vineyards. 107.e

T O

Tokens of good honey. 317.b
Tokens of good Bees. ibid.d

The Table to the first Tome

Tokens of death. 183.c
Tokens of life uncertaine. ibid.
Tooles for smiths who first deuised. 188.b
Tokens by the eares of beasts. 333.d
Torpedo, the Crampefish. 261.d
Nonellius Torquatus Tricongius, a worthie wine-bibber. 427.d.
Tortoiser hath a kidnie alone of them that lay egs. 343.e
Tortoises of the sea. 241.b
Tortoise shels as much as will couer houses. 134.i
Tortoise his lungs without blond. 341.a
Tortivum wine, what it is. 425.b
Towne, by whome first built. 188.b
Towne walls and towers who first reared. 188.b.i
of Tongues. 338.m.339.a
Tongues of serpents and liberds three forked. 338.k
Tongues of Lizards two forked. ibid.
Serpents Tongues as small as haires. ibid.
Tongues of Crocodiles cleaue to their pallat. ibid.
Tongues of Lions and Libards venemen. ibid.l
Tongues of Cats bring madnesse. ibid.
Tongues of Bees very long. 339.a
Tonsillæ, spungeous kernils in men. ibid.b

T R

Trabea, K: Romulus his mantill of estate. 260.h
Trafficke first deuised. 187.c.188.m
Tragelaphis his nature. 214.m
Tragum, what it is. 562.g
Trees the temples of the gods. 357.b. *how they grow.* 508.l
Trees that neuer grow out of their owne kinde. 509.b. *by what meanes they grow.* 508.l. *what trees bring forth young impes at the root.* 510.b. *what trees grow by pricking into the ground.* ibid.k. *how to be remoued.* 512.m *not in windie weather.* 513.e. *their roots not to be handled violently.* 514.g
Trees which be slow in growth. 515.e. *which be forward in fruit.* ibid. *their shoots hinder growth.* ibid. *would ouerspread the face of the earth, if they were not represſed.* ibid.f. *how they grow one vpon another.* 516.l
Trees ought to be planted in Autumne. 522.m
Trees of diuerse natures how to be conioined. 123.d
Trees planted for the vse of Vines. 534.l
Trees of much shadow not good for Vines. 535.a
Trees admirable about the sepulchre of Protesilaus. 495.c
Trees exempt from the worme, blasting, and iopt-ach. 539.a.
Trees hunger-starued, headlesse. ibid.
Trees more or lesse subiect to diseases. 539.b
what Trees soonest be worme-eaten. ibid.c
Trees troubled with certaine flies. 541.c
Trees when they are said to die or to be sicke. 440.g
Trees blasted with certaine winds. 541.c. *shedding of leaues a signe of their reconerie.* ibid.d. *frozen to death in Pontus and Phrygia.* ibid. *soone die hauing once lost their heads.* 542.b
Trees that beare rosin, abide any bruise or wound. ibid.i
Trees growing thicke, kill one another. ibid.k
Trees prospering without leaues. 543.a
Trees changing their colour from blacke to white. ibid.b
Trees changing from better to worse, are unlucky. signesib.c
Trees sunke and swallowed vp of the earth. 443.d
Trees yeelding many prodigious foretokens. ibid. *remedies of Trees diseases.* 544.b
Trees when they desire to be watered. ibid.l
Trees turning their leaues in the Summer Sunstead. 20.b
Trees and timber peeces of monstrous length. 489.d
Trees troubled with Ants, how to be remedied. 547.d
Trees of India exceeding high. 155.d
Trees forced to grow by art. 498.b
Trees standing vpon the North, doe like best. 500.g. *why sometime they lose their fruit.* 500.h. *nourished by raine.* 500.i
Trees standing Southward, soonest shed their leaues. 502.i
no Trees in some countries. 454.m
Trees are not loaden with fruit after one and the same manner. 475.b
Trees more fruitfull in age than in youth, and contrariwise. ibid.
what Trees liue longer than other. 475.e
Trees age soone by bearing. ibid.
Trees bearing fruits diuersly. ibid.
Trees differ in the manner of their growth, either with single stockes or manifold bodies. 476.b.i
Trees differing in root. 477.b
Trees of longest continuance. 494.l.m
Trees replanted that haue been blowne downe. 477.e
Trees fallen of themselues rise of their owne accord. 478.g
Trees fallen, topped and squared, and yet reuiue. 478.b
Trees grow naturally by three manner of meanes. ibid.e
Trees and shrubs will not all grow in euerie place. 478.k. *the reason thereof.* ib. *their Homogeneum or substantiall parts.* 486.b. *their bonie substance or heart.* ibid. *their fat or flesh.* ibid.i. *their marrow, sinewes, blond, and veines.* 487.c.d
Trees of what age best for timber. 488.g
Trees deliuered of a birth of harneis. 489.b
Trees growing in the sea. 402.g.b
Trees ouerthrowne by tides. ibid.
Trees male distinguished from the female by the ax. 463.c
Trees distinguished, according to the places where they loue to grow. 468.g.h
Trees some sauage, others ciuile. ibid.m
Trees that lose not their leaues. 469.a
Trees greene alwaies in the head, shead leaues in the water boughes. ibid.
no Tree about Memphis in Ægypt sheadeth leaues. 469.e
Trees that bud, though they blossome not. 472.g
what Trees haue three springs or buddings in the yeare. ib.i
Trees how they bud, blossome, and beare. 472.l.473.a.b
Trees bearing no fruit at all. ibid.g
Trees vnfortunate and accursed. ibid.f
Trees soonest forgoing their blossome, and shedding their fruit. 374.g
Trees fruitlesse by occasion of the soile. ibid.i
Trees male whether they beare not. ibid.
Trees of shortest life. 495.c
a Tree fish. 236.g
Trebius honoured for bringing down the corn market. 551.c
Trenches and ditches for Vines how to be made. 529.a
Tribes Rusticke in Rome. 550.m
Tribes Vrbane. 551.a
Trichna a fish. 244.e
Trimenon wheat, what it is. 561.b
Triticum. 563.a

Trixis. See Ricinus.
Tritanus, a man of extraordinarie strength. 166.k. *his sonne.* ibid.
Triticum. 561.b
Tritons, fishes, discouered at Lisbon. 236.h. *what they are.* ibid. *how they breed.* 241.d
Troas. 109.c
Trochos, a fish. 266.i
Troglodytes, people aboue Æthiopia swifter than horses. 157.b. *eight cubits high.* ibid.
Troupes of horsemen hidden vnder the boughs of a figtree. 155.d.

T V

Tuberes of two sorts. 438.g
Tuberes, what fruit. 437.f. *when they and Inimbes were brought into Italie.* 438.g
Turneps, how, where, and when to be sown. 571.a.b
Tullus Hostilius first ware the robe Pretexta. 260.h
Tullus Hostilius killed with lightening, and why. 26.k
Tunies, their historie. 242.m
Tunie-fishes readie to ouerturne a ship. 235.c
Turbo the name of a blast. 25.a
Turbot, a kinde of fish. 247.d
Tuscanes, their opinion of lightning. 26.g
Turners craft, whose inuention. 188.l

T W

Twins dangerous to the mother if they bee of both sexes. 158.i.

T Y

Tympania, a kinde of pearles. 255.b
Typhe. 563.a
Tyriamethyst, a double purple colour. 261.a
Tyrus, the description thereof. 102.g
Typhon, the name of a whirlepisse. 24.l. *how mariners may preuent the danger thereof.* ibid.
Tyrannicall rule, who first practised. 189.a

V A

Valour, sundrie examples thereof. 170.b
Valerius Antias a writer. 48.g
Valeria, vnfortunate to the place whither shee was carried. 164.i.
Varietie of mens speech and shape is wonderfull. 153.d
Vappa, what it is. 424.k
Vari, who they be called properly. 350.k
Varices i. swelling, veines more ordinarie in men than in women. 350.k

V B

Vbians fat their ground with any kinde of earth. 506.k

V E

Vedius Pollio his pastime to see lampries deuour men. 248.i
of Veins and Arteries. 345.c
Veine in timber called Fertile. 493.c
Veine in trees what it is. 486.k
Veiouis in the Capitoll. 491.d
Venetians, from whence. 115.d
Venus Cluacina. 451.a. *Venus Murtea or Myrtea.* ibid.x
Venus planet, her nature, motiō, excellencie, & names. 6.b.i *her motion making two stations.* 10.i. *why shee neuer departeth from the Sun more than 46 degrees.* 12.b *her colour.* 13.c
Venerium, Cicer, kinde of pease. 570.g.
Vergiliæ, starres in the taile of Taurus. 20.k. *called the garment hanging out at the brokers shop.* 588.k
Vermin, as lice, &c. in sea as well as in land. 264.g
Vermin hurtfull to trees. 540.m
Veruectum, what it is. 578.m
Verulenus Ægialus, a singular good husbandman. 411.c
Vespasian Augustus his praise. 4.g. *In his Consulship neither Sun nor Moone seene in twelue daies.* 9.e
Vesper the starre, why Venus so called. 6.i
Vespertinus, rising or setting of fixed starres. 587.d
Vetches when to be sowne. 572.i. *not chargeable.* ibid.b

V I

Viatores, what officers at Rome. 552.b
Vicalia, a festiuall holiday. 600.g
Vine the nature thereof. 530.b
Vine planting and pruning, who first practised. 188.m
Vine-sets doe temper the hot ground Carbunculos. 503.b
Vine hath the sense of smelling. 542.l
Vine turneth away from the Radish and Lawrell. ibid.
Vines of sixe sorts. 528.i
Vines take most harme in blooming time by raine. 540.m *erected vpon trees beare latest.* 536.b. *wedded to trees, when to be cut.* 535.b. *how many may be reared to one tree.* ibid. *when such are to be cut.* 535.b. *when vines are to be pruned.* 533.b
Vine leaues to be cleansed once in the spring. ibid.
Vine frames and trailes how they ought to be made. 532.k.
Vine bearing before the seuenth yeare dieth. 531.e
Vines to be represſed and not cockered. 531.a
Vine frames of what best. 530.b
Vines to be set in a drie day. 529.b
Vine hateth all pot-herbes or woorts. ibid.
Vines in what order to be planted. 529.c
Vine trees how they be killed. ibid.
Vines how many in an acre. 530.c. *ought to be pruned once a yeare.* 546.g
Vines full of excaricses not to be trusted. 530.b
Vines yeelding a double vintage yearely. 581.e *they die with much bearing.* 475.d
Vines the elder beare the better wine, but the younger more plentie. 475.c
Vines bearing thrice a yeare. ibid.a
Vines their diseases. 540.i
a Vine in the Forum at Rome. 444.g
Vine Helueneaca. 408.k. *of two kindes.* ib. *very plentifull.* ib.
Vine Arcadia. ibid.e *loueth not Italie.* ib.i *is neuer blasted.* ib.
Vine Spionia, or Spinea. 408.l
Vine Basilica. ibid.b
Vine Venicula. ibid.m
Vine Apiana, why so called. 407.b
Vines, Stacula, Sirculus, Numisiana. 408.m
Vine Murgentina. 409.a
Vine Pompeiana. ibid.
Vine Marica. ibid.
Vine Tudernis. 409.b
Vine Florentia. ibid.
Vine Talpana. ibid. *why so called.* 409.c
Vine Etesiaca. 409.b. *why so called.* ibid.c
Vine Conseminia. 409.b
Vine Irtiola. 409.c. *Vine Pumula.* ibid.d

Vine Bananica. 409.d
Vine Gaurania. ibid.
Vine Falerna. ibid.
Vine Tarentine. ibid.
Vine Duracina. 409.f
Vine Ambrosiaca. ibid.
Vine Orthampelos. ibid.
Vines Dactylides. 410.g. *why so called.* ibid.
Vines Columbine. ibid.
Vine Tripedanea. ibid.
Vine Rhetian 410.k
Vine Alexandrine. ibid.
Vine Naubonica. 411.b
Vine Scantiana. 414.i
Vines Fundane. 414.k
Vines Taurominitane. 423.a
Vine Theriace. ibid.
Vines, Libanios, Aspendros. 528.l
Vine compluviata, what it is. ibid.
Vine sets how they may grow without their marrow or pith 528.b. *how they beare grapes without kernels.* ibid. *their distaunce one from another.* 527.c. *full of ioynts, fruitlesse.* 527.b
Vintage time. 605.e
rules serning for Vintage time. ibid.e.f
Vine props and railes which be best. 525.b
Vine tendrils and burgens how to be ordered for the table. 423.c.
Vines afford most plants of all other trees. 527.a
Vine tree how to be grafted. 520.b
Vines draw into them the taste of herbes and plants growing neere vnto them. 422.g
Vineyard how to be bounded. 529.b. *how to be ordred with sea alleft expense.* ibid.f. *ought to be exposed to the Sun.* 527.c.
Vineyards Statame. 414.b
Vinegre how it is made, and the vses thereof. 424.k
Vinegre of Cypresse figs. 412.a
Vinegre of Alexandrine figs. ibid.
L. Vitellius stored his ferme with fig trees. 445.a
Vis maior, what it is. 599.a

V L

Vlysses ship turned into a rocke. 79.d

V N

Vnedo, the fruit of the Arbute tree. 447.c

V O

Volux, a worme hurtfull to Vines. 547.c
Volta the name of a monster. 26.k
Vopisci, who be so called. 160.b
Vortex, the name of a stormie blast. 25.b

V R

Vrchins of the sea. 253.a
Vrinum, what kinde of addle egge. 300.k

V T

Veterus or loci in a woman, what part. 344.b

V V

Vulcans temple built by Romulus. 495.a
Vulturnus, what wind. 22.l
Of Voices, a discourse. 353.a.b.c

W A

WAgons and chariots who first made. 188.l
Walwort, a weed naught for ground. 508.g
Walnuts emploied at weddings. 445.c. *and why.* ibid.
Walnut trees brought out of Persia by commandement of kings. 445.f.
Walnut, why called Persicon and Basilicon. ibid.
Walnut named in Greeke Caryon, and why. ibid.
Walnut huskes and the young nuts how to be vsed. 446.g
Walnuts differ onely in the shell. ibid.
Walnut shels diuided in twaine. ibid.
Walnuts called Inglandes, and why. ibid.e
Walnuts brought first into Italy by L. Vitellius. ibid.k
Walnut tree wood cracketh before it breaketh. 492.m
Water an element. 2.l. the roundnesse thereof. 31.e. *the benefit it hath by the earth, and the earth by it.* 32.b
Water of what taft. 449.a
Waters fresh run aloft the sea, and why. 44.m
Watering cherisheth corne and killeth grasse about Sulmo in Italy. 544.m
Water bringeth forth greater living creatures and more plentie than the earth. 134.m
Water verie materiall for corne fields. 581.f *ouerflowing corne fields as good as a weeding in some place.* 545.a
Wardenpeares. 439.d
Wax made of all hearbs saue Dockes and Goosefoot. 313.d

W E

Weauing whose deuise. 188.i
Weeding of corne. 580.l
Weeds choking corne and pulse. 545.a
Weights and measures whose deuise. 188.l
Weapons and armour whose inuention. 189.a.b
Wesps how to be kept from preserued fruits. 441.f
Wesps feed greedily vpon serpents: 355.c
Westerne wind Famonius a husband to all plants, and to certaine mares. 471.d
Wez.ando, what it is. 339.c

W H

Whales and Whirlepoles. 235.b.c. *as long as foure acres of land* 235.c
Wheat sold at Rome for one As by the Modius. 551.b.c
Wheat how it is stiked, eared, and ioynted. 558.k
Wheat of Italie best. 559.e. *other countries compared with.* ibid.
Wheat of Bœotia commended. 559.e
Wheat of Italie praised by Sophocles the Poet. 560.b
Wheat esteemed by weight, and so compared. 560.b.c
Wheat different in the straw or stalke. 560.c
Wheat of Thrace, a three moneths corne. ibid.m
Wheat of Thrace, a two moneths corne. 561.a
Wheat subiect to the mieldew. 562.k
Wheat of sundry kindes different in name. 562.m
Wheat what proportion it should yeeld in meale and flowre. 563.e.f.
common Wheat Triticum exceeding fruitfull. 564.m. *the wonderfull and incredible encrease of wheat in Africke.* 565.a.
Wheeles, a kinde of fishes. 236.g

W I

Wilding apples. 438.m
a wedded Wife turned to be a man and a husband, and contrariwise. 158.b
Willowes of many sorts. 484.l. *their manifold vses in pearches, trailes, props, and bindings.* ibid.
red-Willowes good both to wind and bind. 484.m
Willowes fit for wicker worker. ibid.
as gainefull to the master, as corne fields, medowes, and olive rows. 485.b *See more in Withies.*
Wings of Bats diuided into ioints. 347.a
Winds vaigne in the region of the aire. 19.c *how they arise and whence.* 21.c. *their natures and obseruations.* 22. 23. &c.
Windpipe, what it is. 339.c
the obseruation of winds good in husbandrie. 608.i
Winds who first distinguished. 189.d
Winds how they may be knowne distinctly one from another. 608.g
Wine a most pleasant liquor to be vsed inwardly. 428.i
of Wines 195 *sorts.* 428.i
Wine who first delaied with water. 189.m
Wine congealed into yce. 425.d
Wine lees maintaineth fire. ibid.e
Wine how it is knowne to decay. ibid.b
Wines how to be seasoned and medicined. 425.a.b. *how to be ordered, prepared, and seasoned.* 425.d
Wines allowable for sacrifice and the seruice of the gods. 423.c.
Greeke wines reiected in sacrifice. ibid.
Wines when they grew in request at Rome. 418.b
Wines turne sower and recouer of themselues. 423.b
Wines reduced into 80 *kindes.* 418.g
of Wines foure principall colours. 416.l
Wine how to be tunned and kept. 425.c.d
Wine-cellers how to be ordered. ibid.e
Wine vessels how to be placed in the cellar. ibid.
Wine vessels how to be made and chosen. 427.d
drinking Wine fasting. ibid.
Wine of strange and wonderfull effects. 422.l
Wine causing women to be fruitfull. ibid. *procuring madnesse.* ibid. *driuing women to slip their birth.* 422.m *disabling for the act of generation.* ibid.
Wines spiced and compound forbidden by Themison. 422.k
Wines of trees and shrubs. ibid.h
Wines of sundry hearbes and roots. ibid.g
Wine Phorbeian. 416.k
Wine Cicibelites. ibid.l
Wine Halyntium. ibid.
Wines sweet of diuerse sorts. 417.a.b.c.d
Wine Aiglences. 417.b
Wine Dulce. ibid.
Wine Diachyton. ibid.
Wine Melitites. 417.d. *how it is made.* ibid.
Wines alter according to the climat and soile where the Vines grow. 415.b
Wine spared among the Romanes. 418.k.l. *Forbidden in sacrifice.* ibid.h
Women in Rome not allowed to drinke wine. 418.k
Women punished for drinking wine. 418.k.l
Wines aromatized. 419.a
Wines Greeke. 419.f
Greeke wine giuen in a congiarie by L. Lucullus at Rome. 420.g.
Wine of Chios prescribed for the Cardiaca passio. 420.g
left by Hortensius to the quantitie of 10000 *barrels when he died.* ibid.
Wines giuen in a congiarie by Iul. Cæsar, Dictatour. 420.b
Wines artificiall. 420.i
Wine Omphacium. ibid.
Wine Oenanthinum. ibid.
Wine Adynamon. 420.l. *how it is made.* ibid. *the vse thereof.* ibid.
Wine of Millet. 420.l
Date wine. 420.m. *how it is made.* ibid.
Fig wine, Sycites. 421.a. *wine of Lotus.* ibid.
Wine of Carobs. ibid.
Wine Rhoites, of Pomegranats. ibid.
of Gorneil or wild cherries. ibid. *of Medlers.* ibid. *of Ceruoises.* ibid. *of Mulberies.* ibid. *of Pen-nuts.* ibid.
Wine of Myrtles how it is made. 421.b
Wine Myrtidanum. ibid.
Wine of Beterre. 414.l. *of Tarentum.* 414.m. *of Seruittum.* ibid. *of Consentia.* ibid. *of Tempsa.* ibid. *of Bauia.* ibid. *of Lucania.* ibid.
Wine of Thurium. 415.a
Wine of Lagaria. ib. *brought into credit by Messala.* ibid.
Wine of Trebollia. ibid. *of Caulinum.* ibid.
Wine Trebulane. ibid. *Trifoline.* ibid.
Wine of Pompeij. ibid.
Wines of Spaine. 415.a
Wine of Laletatane. ibid.
of Tarracon, of Arragon, of Laurone. ibid.
Wines of the Balear Islands. ibid.
Wine of Thasos. 415.c. *of Chios.* ibid.
Wine Arinsium. ibid.
Wine of Lesbos ibid. *of Clazomene.* ibid. *of mount Tmolus.* ibid.
of Sicyone, Cypresse, Telmessus, Tripolis, Berytus, Tyrus, Sebennys. 415.f
Wine Hippodamantian. ibid. *Cantharites.* ibid. *Gnidian.* ibid.
Wines of Catacecaumene. 416.g. *of Petra.* ibid. *of Mycone.* ibid.
Wine Mesogites. 416.g
of Ephesus. ibid. *of Apamea.* ibid.
Wine Protagium. ibid.
Wines of Pontus, Nasbercenites, Oræoticke, Oeneates, of Leucas, of Ambracia, of Peparethus. 416.g.h
Wine Leucocbrum. 416.i
Wine Tethalassomenum. ibid.
Wine Thalassites. 416.k. *why so called.* ibid.
Wine Greekish. 416.k
Wine Scyzinum, Icaomelis, Lecthpagites. 422.g
Wines of garden hearbes. 421.b
of Radish. 421.c. *of Sparage.* ibid.
of Savorie. ibid. *of Maioram.* ibid.
of Origan. ibid. *of Smallach seed.* ibid.
of Southernwood, ibid. *of wild Mints.* ibid.
of Rue. ibid. *of Nep or Calaminth.* ibid.
of running Thyme. ibid. *of Horehound.* ibid.
Wine of Nauews. 421.c
Wine Squillitickc. ibid.
Wines of flowres. 421.c

Wine

Wine voſat, how it is made. 421.d
Wine of Celtricke ſpikenard. ibid.
Wine Ipocras or aromatized. ibid. *after what ſort.* ibid.
Wines condite, or Pepper wines. 421.e
Wine Nectarites, why ſo called. ibid.
how it is made of Elecampane. ibid.
worme-wood Wine. ibid.
hyſſope Wine. 421.f
ellebore Wine. ibid.
Scammonite Wine. ibid.
Winkles or Sea-ſnailes, what fiſhes. 253.c. *of ſundry ſorts.* ibid.e.
what Winter we ſhall haue, knowne by Bruma, according to Democritus. 589.f
Witchcraft by praiſing and eye-biting. 155.a
Wit, ſundrie examples thereof. 171.b
Withie tree, called Spilfruit. 474.b. *it groweth quickly if it be pricked onely into the ground.* ibid.
Withies or willowes where they loue to grow. 484.l
exceeding commodious. ibid. *compared with poplers and alders.* ibid.

WO

Women bearing but once in their life time. 156.m
Women ſeldome left handed. 165.e
Women with a double apple in their eie witches. 155.b
bearing children at ſeauen yeares of age. 157.a. *at fiue yeares.* ibid. *how many they may beare at one burthen naturally.* 157.d
Women in Ægypt more fruitfull than others, and the reaſon. ibid.
Womens monethly ſickeneſſe. 163.c. *the ſtrange effects thereof.* ibid.d.e. *they ſtay commonly at fourtie yeares of age.* 163.a
a Woman deliuered at once of two boies and two girles. 157.d. *it preſaged famine.* ibid.
Women many times lie for dead and whereupon. 184.k
a Woman deliuered of twenty children at four births. 157.e
Wood moſt maſſie and which ſwimmeth not. 490.g
Wood ſeruing to ſtrike fire. ibid.k
Woods of ſundrie natures and for diuerſe vſes. 490.k.l. & 493.d.e.f.
Wood-wormes, foure ſorts 492.b
Wood breeding no worme. 492.i
Wood how it is preſerued from cleaning. 492.l
Wood of diuerſe natures. ibid.
World, what it is. 1.c. *euerlaſting and infinit.* 1.c. *vnmeaſurable,* 1.d
Worlds, not innumerable. 1.d. *of a round forme.* 1.f
World viſible, a hemiſphere. 2.g
it turneth round in foure and twentie houres, 2.g
whether in turning it make an audable ſound or harmonie. 2.h. *whether the bodie thereof be all ſmooth.* 2.b
World certaine and yet vncertain. 1.e. *containing all things within it ſelfe.* ibid.
World and Heauen all one. 1.b
World, why called in Greeke Κοσμος, *and Mundus in Latine,* 2.k. *the geometricall dimenſion.* 14.l
Wormes hurtfull to ſtanding corne. 544.k

X

Xenophilus lined an hundred and fiftie yeares without ſickeneſſe. 183.b
Xiphia, a kinde of Comets. 15.a
Xylocinnamon. 373.a
Xylobalſamum. 377.b. *the price of it.* 378.b

Y

Yeels, the manner of their engendring. 265.d
Yeels, their nature. 247.f. *their life,* ibid.
how they be taken in Benacus. 248.g
of great length. 235.c
Yeeles-skins vſed to ierke boys. 249.k
Yeeles dead, onely, ſlote not aboue the waters. 247.g
Yeeres diuerſly reckoned. 181.a
Yeere diuided into twelue moneths. 7.b
Yoking oxen who firſt began. 189.a
Yron and Steele who found firſt. 188.k
Yron-ſmith forge who firſt vſed. 188.l

Z

Zoroaſtres laughed the firſt day that he was borne: he lined in a wildernesſe 20 yeares with cheeſe. 349.b
Zodiacke, a circle in heauen. 2.k. *the deuiſers of all the parts thereof.* 5.m